



EVANS NEW RESIDENCE SHEET INDEX

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- S6 NOTES
- S7 STRUCTURE NOTES
- S8 CALCULATION/REPORTS



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Project Name and Address:

PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date:
 AUGUST 23, 2018
 Scale:

DRAWING TITLE:

Sheet :

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Page No. :

No.	Revision/Issue	Date

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Mr & Mrs Evans Residence
Calculation Description: Title 24 Analysis

Calculation Date/Time: 21:09, Sun, May 13, 2018
Input File Name: tmpD1F5.tmp.xml

CF1R-PRF-01
Page 1 of 9

GENERAL INFORMATION table with columns 01-21 containing project details like City, Zip Code, Climate Zone, Building Type, etc.

COMPLIANCE RESULTS table with columns 01-03 indicating building compliance status.

ENERGY USE SUMMARY table with columns 04-08 showing Energy Use (KTDV/ft²-yr) for Space Heating, Cooling, IAQ, Water, and Compliance Energy Total.

Registration Number: 218-P010138194A-000-000-000000-0000
Registration Date/Time: 2018-05-14 10:03:00
HERS Provider: CalCERTS, Inc.

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Page 2 of 9

ENERGY DESIGN RATING table with columns 01-04 showing EDR of Standard, Proposed, and Final Proposed values.

REQUIRED SPECIAL FEATURES table listing features like high level of insulation, ceiling, and floor.

HERS FEATURE SUMMARY table listing building-level, cooling system, and domestic hot water system verifications.

BUILDING - FEATURES INFORMATION table with columns 01-07 showing Project Name, Conditioned Floor Area, Number of Dwelling Units, etc.

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Page 3 of 9

ZONE INFORMATION table with columns 01-07 showing Zone Name, Type, HVAC System Name, and Water Heating System.

OPAQUE SURFACES table with columns 01-08 showing Name, Zone, Construction, Azimuth, Orientation, Gross Area, and Window & Door Area.

OPAQUE SURFACES - Cathedral Ceilings table with columns 01-11 showing Name, Zone, Type, Orientation, Area, Skylight Area, Roof Rise, Roof Pitch, Roof Tilt, Roof Reflectance, Roof Emittance, and Framing Factor.

ATTIC table with columns 01-08 showing Name, Construction, Type, Roof Rise, Roof Reflectance, Roof Emittance, Radiant Barrier, and Cool Roof.

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FENESTRATION / GLAZING table with columns 01-10 showing Name, Type, Surface, Width, Height, Multiplier, Area, U-factor, SHGC, and Exterior Shading.

OPAQUE DOORS table with columns 01-04 showing Name, Side of Building, Area, and U-factor.

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OVERHANGS AND FINIS table with columns 01-14 showing Overhang, Left Fin, and Right Fin details for various windows.

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OPAQUE SURFACE CONSTRUCTIONS table with columns 01-07 showing Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Winter Design U-factor, and Assembly Layers.

BUILDING ENVELOPE - HERS VERIFICATION table with columns 01-04 showing Quality Insulation Installation, Spray Foam Insulation, Building Envelope Air Leakage, and CFM50.

WATER HEATING SYSTEMS table with columns 01-06 showing Name, System Type, Distribution Type, Water Heater, Number of Heaters, and Solar Fraction.

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PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
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6173 VALLEY VIEW ROAD OAKLAND, CA 94010

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Sheet information table with columns for No., Revision/Issue, Date, and Sheet number (3 of 46, A003).

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Project Name: Mr & Mrs Evans Residence **Calculation Date/Time:** 21:09, Sun, May 13, 2018 **Page 7 of 9**
Calculation Description: Title 24 Analysis **Input File Name:** tmpD1F5.tmp.xml

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model / Other	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	1	0.94 EF	199,000 Btu/hr	R-0/R-0	n/a	n/a	n/a	n/a

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
New HVAC-11	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	Centrifuge	1	94 AFUE

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	Ducts/Crawl	Sealed and tested	8	Crawl space	None	Air Distribution System 1-hers-dist

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	n/a

Registration Number: 218-P0101381844-000-000-000000-0000
 CA Building Energy Efficiency Standards - 2016 Residential Compliance
 Registration Date/Time: 2018-05-14 10:03:00
 Report Version - CF1R-04302018-1016 SP2
 HERS Provider: CalCERTS, Inc.
 Report Generated at: 2018-05-13 21:10:45

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01
Project Name: Mr & Mrs Evans Residence **Calculation Date/Time:** 21:09, Sun, May 13, 2018 **Page 8 of 9**
Calculation Description: Title 24 Analysis **Input File Name:** tmpD1F5.tmp.xml

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
Sfam IAQVentRpt	46	0.25	Default	0	Required

Registration Number: 218-P0101381844-000-000-000000-0000
 CA Building Energy Efficiency Standards - 2016 Residential Compliance
 Registration Date/Time: 2018-05-14 10:03:00
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Project Name: Mr & Mrs Evans Residence **Calculation Date/Time:** 21:09, Sun, May 13, 2018 **Page 9 of 9**
Calculation Description: Title 24 Analysis **Input File Name:** tmpD1F5.tmp.xml

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
 1. I certify that this Certificate of Compliance documentation is accurate and complete.
 Documentation Author Name: Radik Musin
 Signature Date: 2018-05-14 08:04:03
 Address: PO Box 1301, Murrieta, CA 92564
 City/State/Zip: Murrieta, CA 92564
 Phone: 951-445-7213

RESPONSIBLE PERSON'S DECLARATION STATEMENT
 I certify the following under penalty of perjury, under the laws of the State of California:
 1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
 2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
 3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
 Responsible Designer Name: Terecia Evans
 Responsible Designer Signature: Terecia Evans
 Date Signed: 2018-05-14 10:03:00
 Company: Homeowner - Builder
 Address: 6173 Valley View Rd, Oakland, CA 94611
 License: N/A
 City/State/Zip: Oakland, CA 94611
 Phone: 209-484-4090

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

Registration Number: 218-P0101381844-000-000-000000-0000
 CA Building Energy Efficiency Standards - 2016 Residential Compliance
 Registration Date/Time: 2018-05-14 10:03:00
 Report Version - CF1R-04302018-1016 SP2
 HERS Provider: CalCERTS, Inc.
 Report Generated at: 2018-05-13 21:10:45

BUILDING ENERGY ANALYSIS REPORT

PROJECT:
 Mr & Mrs Evans Residence
 6173 Valley View Rd
 Oakland, CA 94611

Project Designer:
 PixelArch Ltd.
 1442 N.Dale Ave
 Anaheim, CA 92801

Report Prepared by:
 Radik Musin, PE
 MECONE INC.
 PO Box 1301
 Murrieta, CA 92564
 (951) 445 7213

Job Number:
 180513

Date:
 5/13/2018

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2016 Building Energy Efficiency Standards.
 This program developed by EnergySoft Software - www.energysoft.com.

RESIDENTIAL MEASURES SUMMARY RMS-1

Project Name: Mr & Mrs Evans Residence
 Building Type: Single Family Addition Alone
 Date: 5/13/2018
 Project Address: 6173 Valley View Rd Oakland
 California Energy Climate Zone: CA Climate Zone 03
 Total Cond. Floor Area: 1,614
 Addition: n/a
 # of Units: 1

Construction	Type	Cavity	Area (ft ²)	Special Features	Status
Wall	Wood Framed	R 21	1,936		New
Demising	Wood Framed w/o Crawl Space	-no insulation	782		New
Roof	Wood Framed Attic	R 38	515		New
Roof	Wood Framed Rafter	R 38	220		New
Door	Opaque Door	-no insulation	21		New
Floor	Wood Framed w/Crawl Space	R 19	832		New
Roof	Wood Framed Rafter	R 38	47		New

Orientation	Area(ft ²)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (NW)	42.2	0.320	0.40	none	none	Bug Screen	New
Left (SW)	36.0	0.320	0.40	none	none	Bug Screen	New
Left (SW)	120.0	0.320	0.40	none	none	Bug Screen	New
Right (NE)	44.5	0.320	0.40	none	none	Bug Screen	New
Front (SE)	73.0	0.320	0.40	none	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New
Front (SE)	14.6	0.320	0.40	3.0	none	Bug Screen	New

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Central Furnace	94% AFUE	No Cooling	14.0 SEER	Setback	New

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
New HVAC-1	Ducted	Ducted	Crawlspace	8.0	New

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Small Instantaneous Gas	1	0.94	Standard	New

EnergyPro 7.2 by EnergySoft User Number: 9963 ID: 180513 Page 12 of 16



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Project Name and Address:

PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date:
 SEP. 04, 2018
 Scale:

DRAWING TITLE:
 ENERGY REPORT

Sheet :

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Page No. :

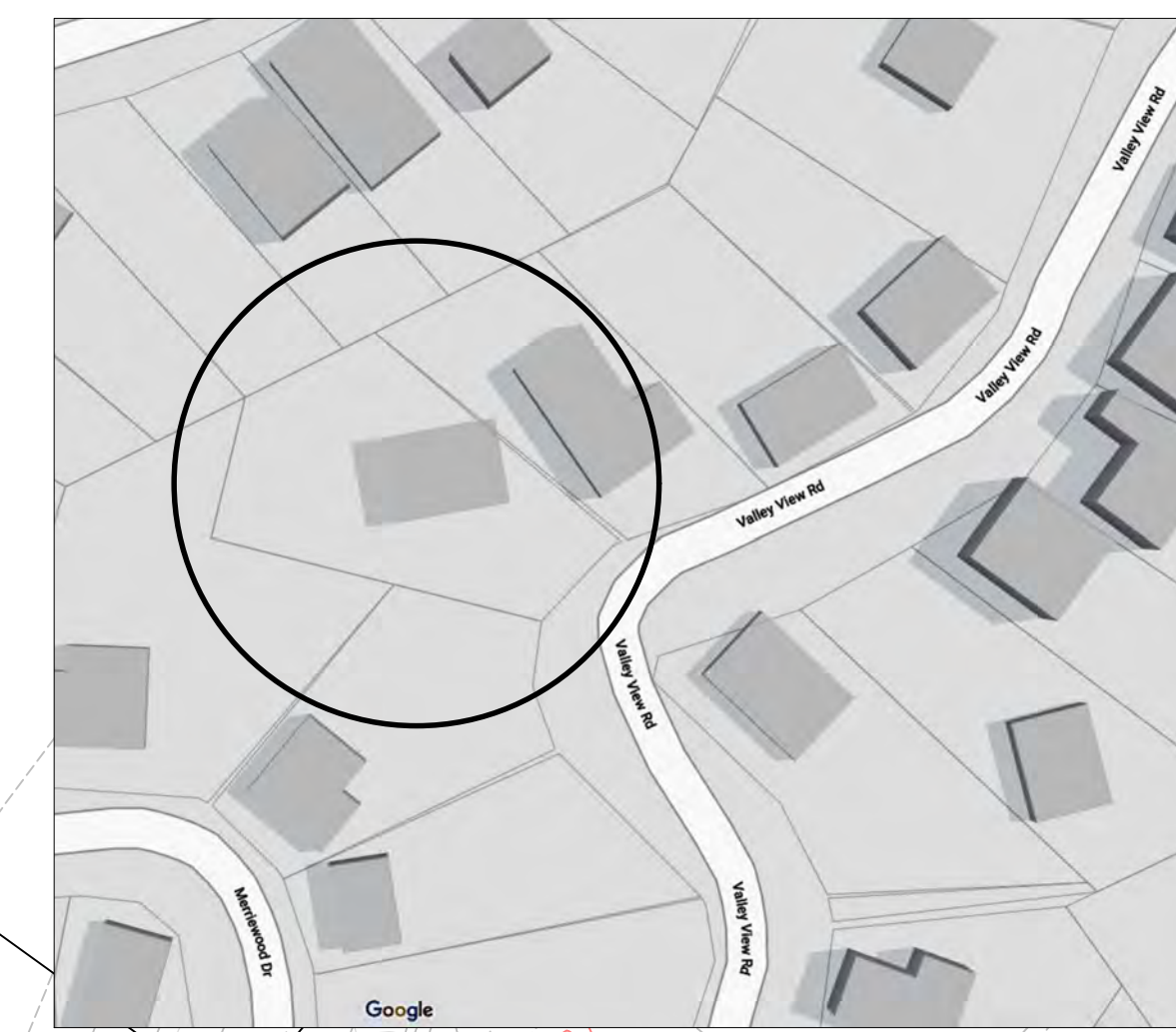
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No.	Revision/Issue	Date
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2	FOR PERMIT	09.07.18

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PROPOSED SITE PLAN
Scale: 1/8" = 1'-00"



VICINITY MAP



AERIAL PHOTO

SITE PLAN SHEET NOTES

1. DEMOLISH THE EXISTING FOUNDATION (SHOWN DASHED).
2. SEE SHEET A201, A202 FOR T.O.W., B.O.W. AND OTHER ELEVATIONS NOT SHOWN.
3. SEE SHEET C201 FOR MODIFICATIONS MADE TO THE EXISTING GRADE.

PROJECT DESCRIPTION:

NEW UP-SLOPE RESIDENCE OF THREE LEVELS WITH THE GARAGE ON THE LOWEST, THE MAIN LIVING AREAS ON THE SECOND, AND THE BEDROOMS ON THIRD LEVEL.

PROPOSED LIVING SQUARE FOOTAGE DETAILS:

2304.9 SQ. FT UNDER ROOF
1613.5 SQ. FT LIVING AREA
(831.8 SQ. FT 1ST FLOOR; 781.7 SQ. FT 2ND FLOOR)
400 SQ. FT 2-CAR GARAGES
246.6 SQ. FT COVERED FRONT PORCH
44.8 SQ. FT BALCONY

SITE LEGEND - PROPOSED

PROPERTY ADDRESS:
6173 VALLEY VIEW RD OAKLAND, CA 94611

LEGAL DESCRIPTION :
LOT 189, BLOCK 26 OF VALLEY VIEW ROAD OAKLAND, CA.

ZONING CLASSIFICATION:
R 3-MEDIUM DENSITY RESIDENTIAL ZONE

APN 48G7436-22-1

OCCUPANCY GROUP:
R (RESIDENTIAL SINGLE FAMILY)

BUILDING HEIGHT :
MAX. 36' (Oakland, California, Planning Code Table 17.13.05 Height Regulations for all Lots with a Footprint Slope of >20%)
PROPOSED: 30'-11" (The building height is measured from finished or existing grade, whichever is lower)

This Code: (Ord. No. 13172, § 3(Exh. A), 7-2-2013; Ord. No. 13090, § 4(Exh. A), 10-4-2011; Ord. No. 13064, § 2(Exh. A), 3-15-2011)

1



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Project Name and Address:

**PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
6173 VALLEY VIEW ROAD OAKLAND, CA 94010**

Date:
SEP. 04, 2018

Scale:
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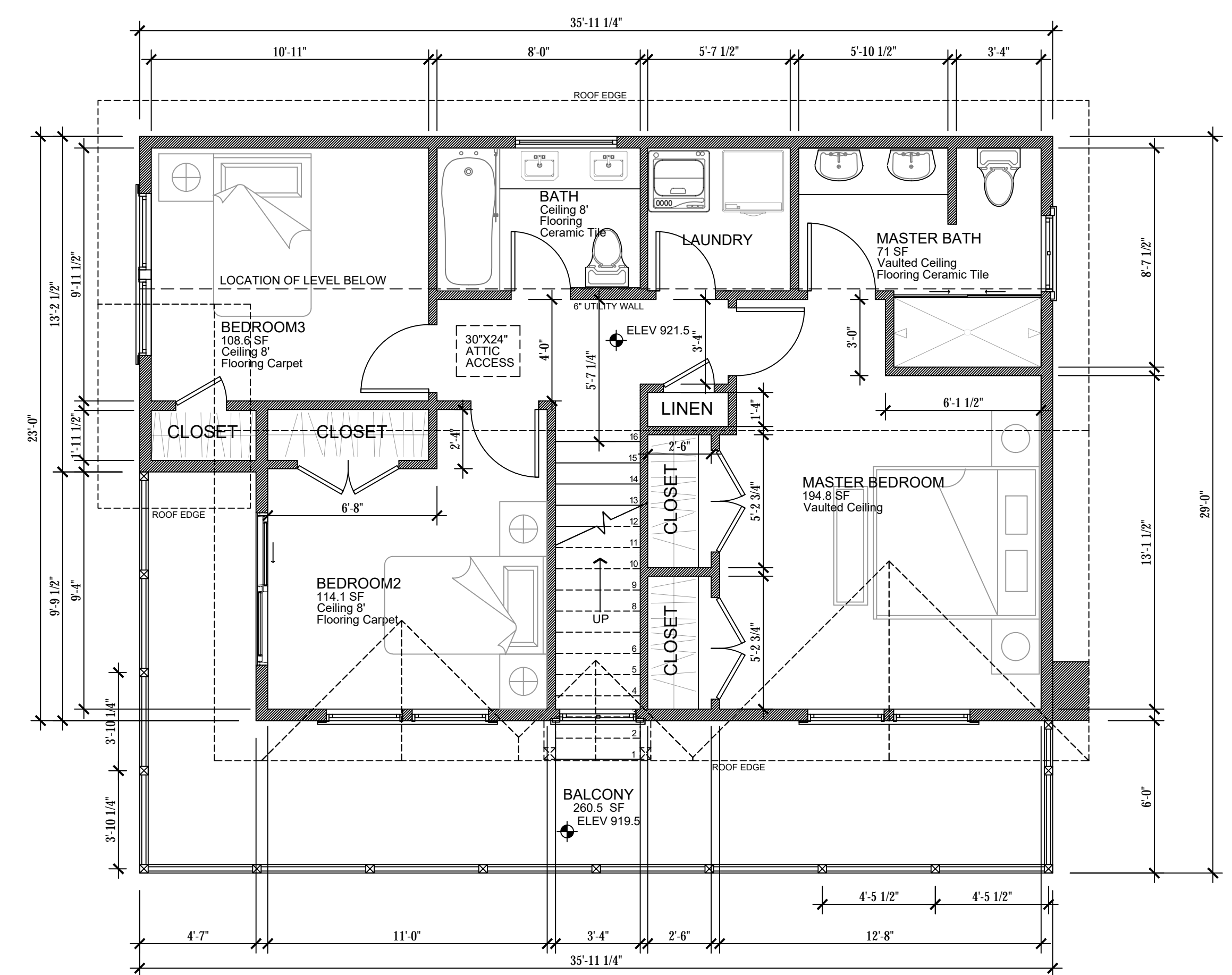
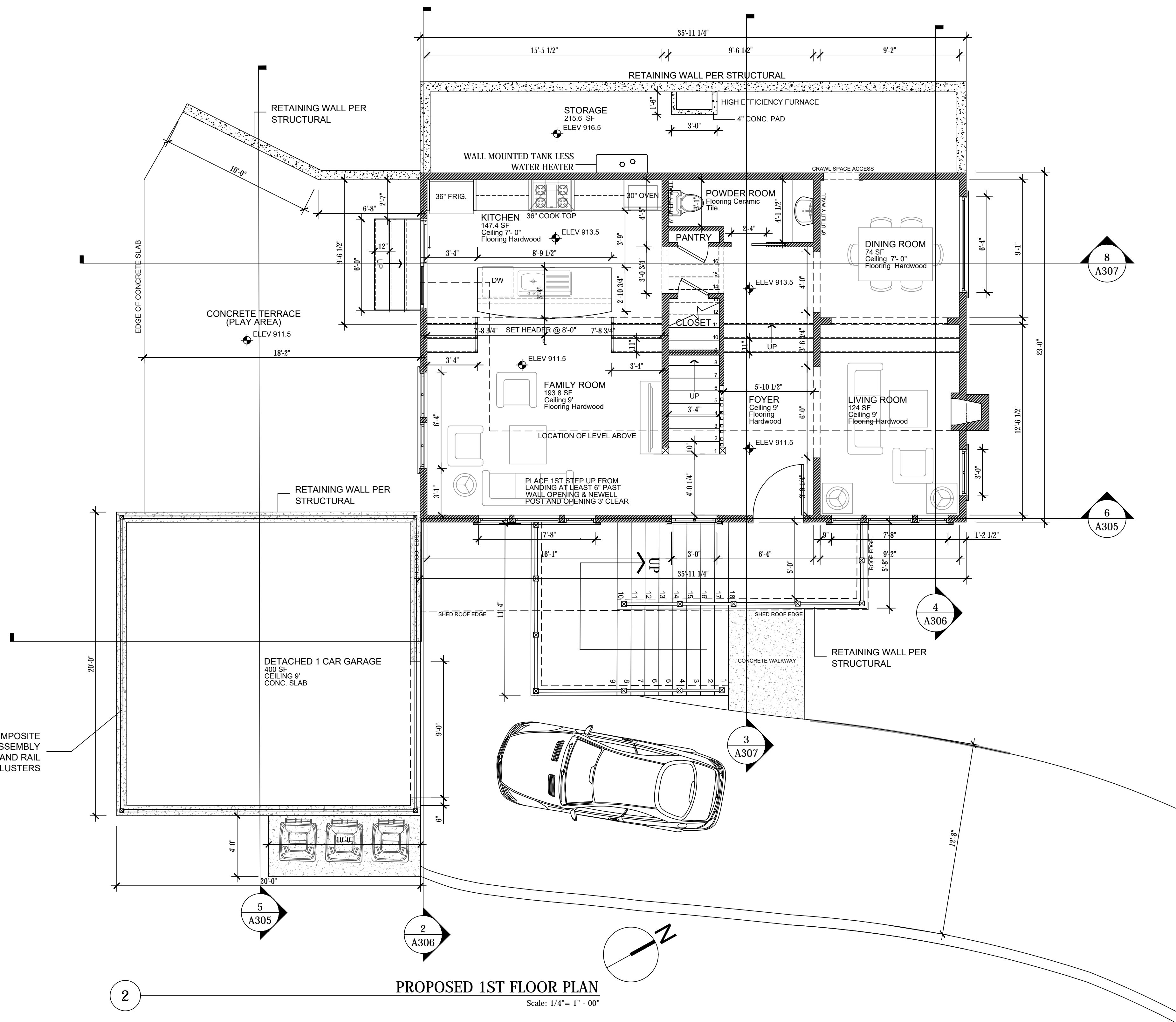
DRAWING TITLE:
PROPOSED SITE PLAN

Sheet :

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A101

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No.	Revision/Issue	Date
1	DESIGN REVIEW	07.26.18
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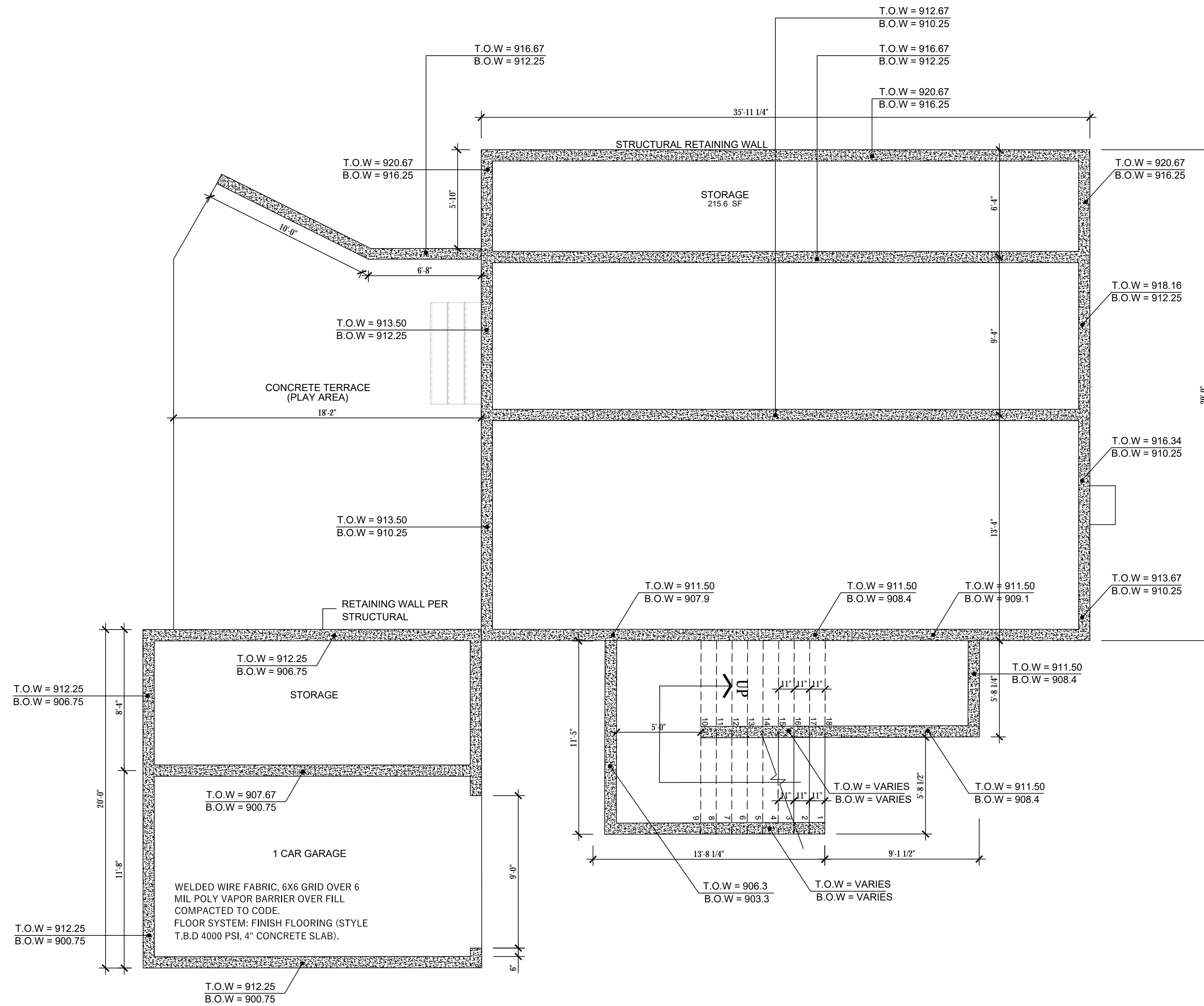


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 www.pixelarchltd.com

Project Name and Address:
**PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
 MR AND MRS. EVANS**
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date: SEP. 04, 2018
 Scale: 1/4" = 1'-00"
 DRAWING TITLE: **PROPOSED 1ST AND 2ND FLOOR PLANS**
 SHEET: **6 of 46**
A201
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4 PROPOSED RETAINING WALL PLAN
Scale: 1/4" = 1' - 00"



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Date:
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 PROPOSED RETAIN WALLS PLAN

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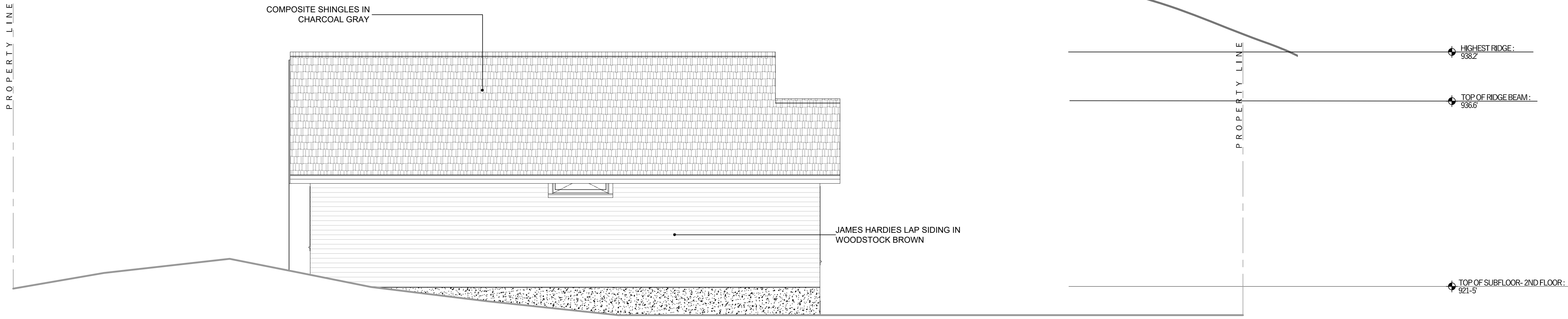
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EXTERIOR MATERIAL LEGEND



5 PROPOSED EAST (FRONT) ELEVATION
Scale: 1/4" = 1' - 00"



6 PROPOSED WEST (BACK) ELEVATION
Scale: 1/4" = 1' - 00"



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 SEP. 04, 2018
 Scale:
 1/4" = 1' - 00"

DRAWING TITLE:

PROPOSED EAST AND WEST ELEVATIONS

Sheet :

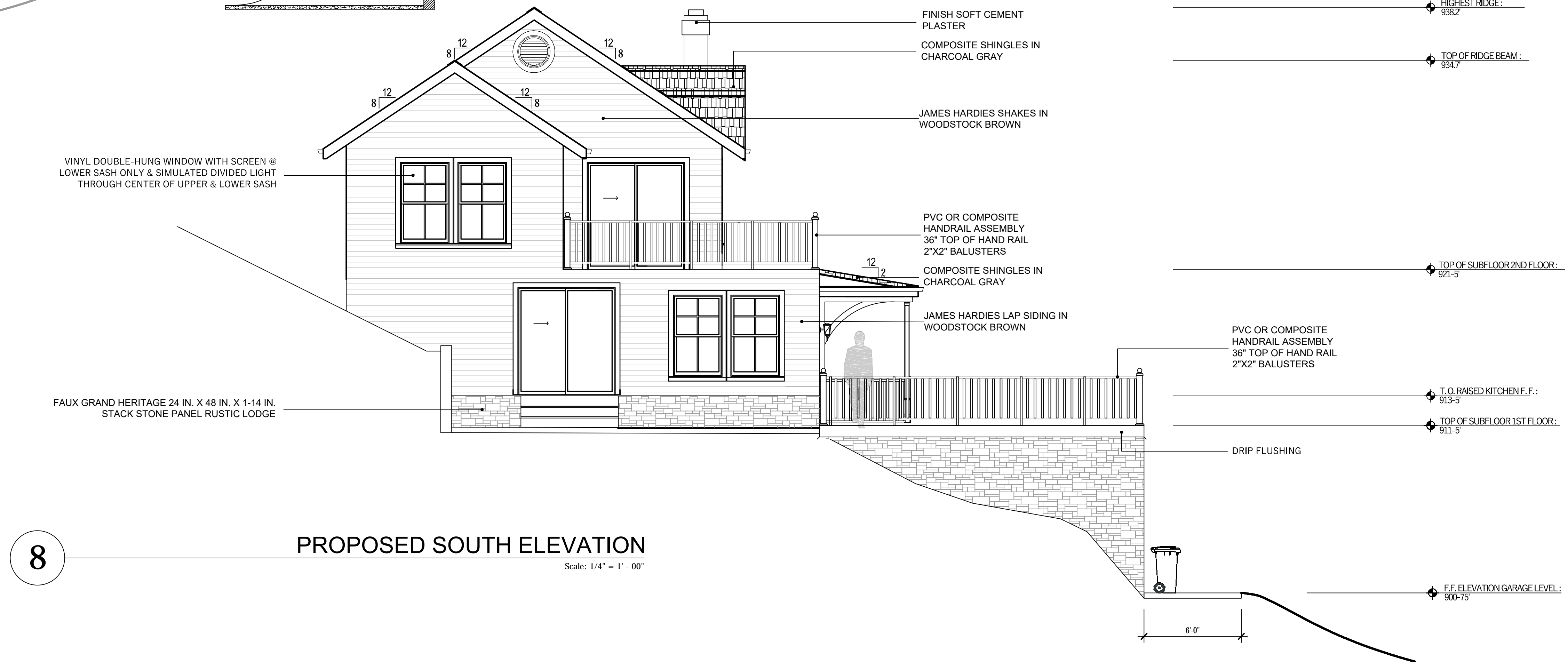
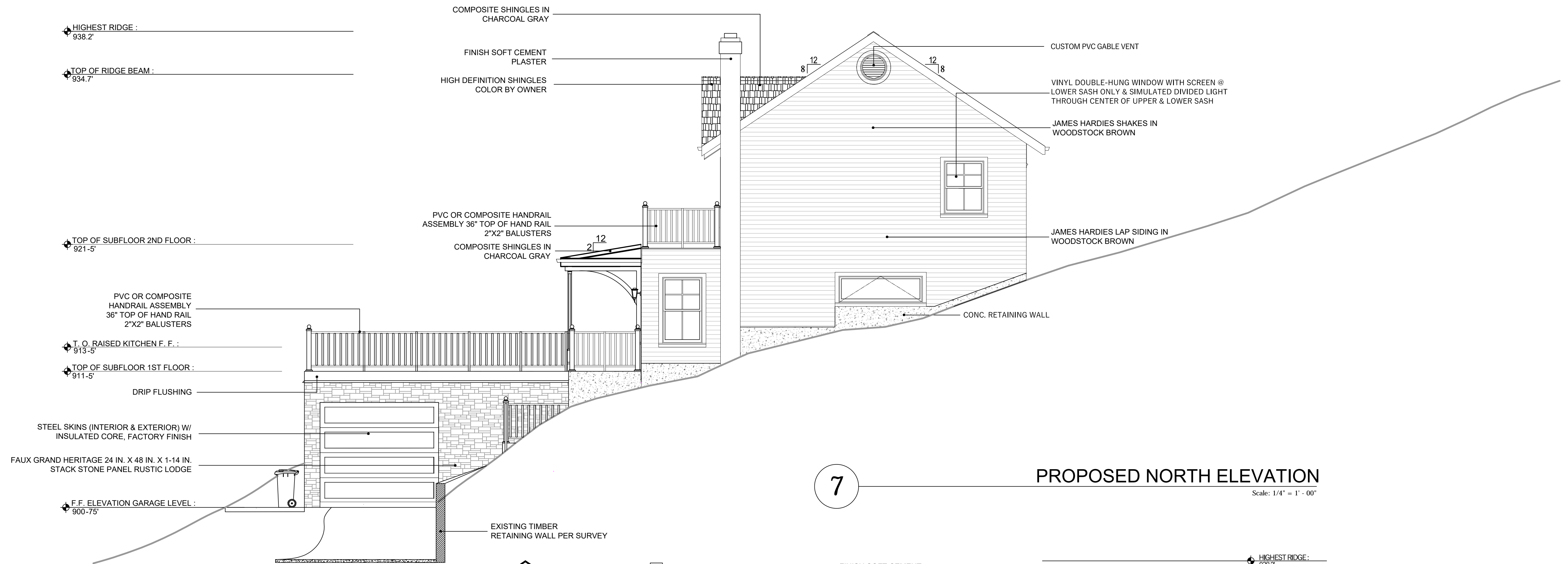
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Date:
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 1/4" = 1' - 00"

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 PROPOSED NORTH AND SOUTH ELEVATIONS

Sheet :

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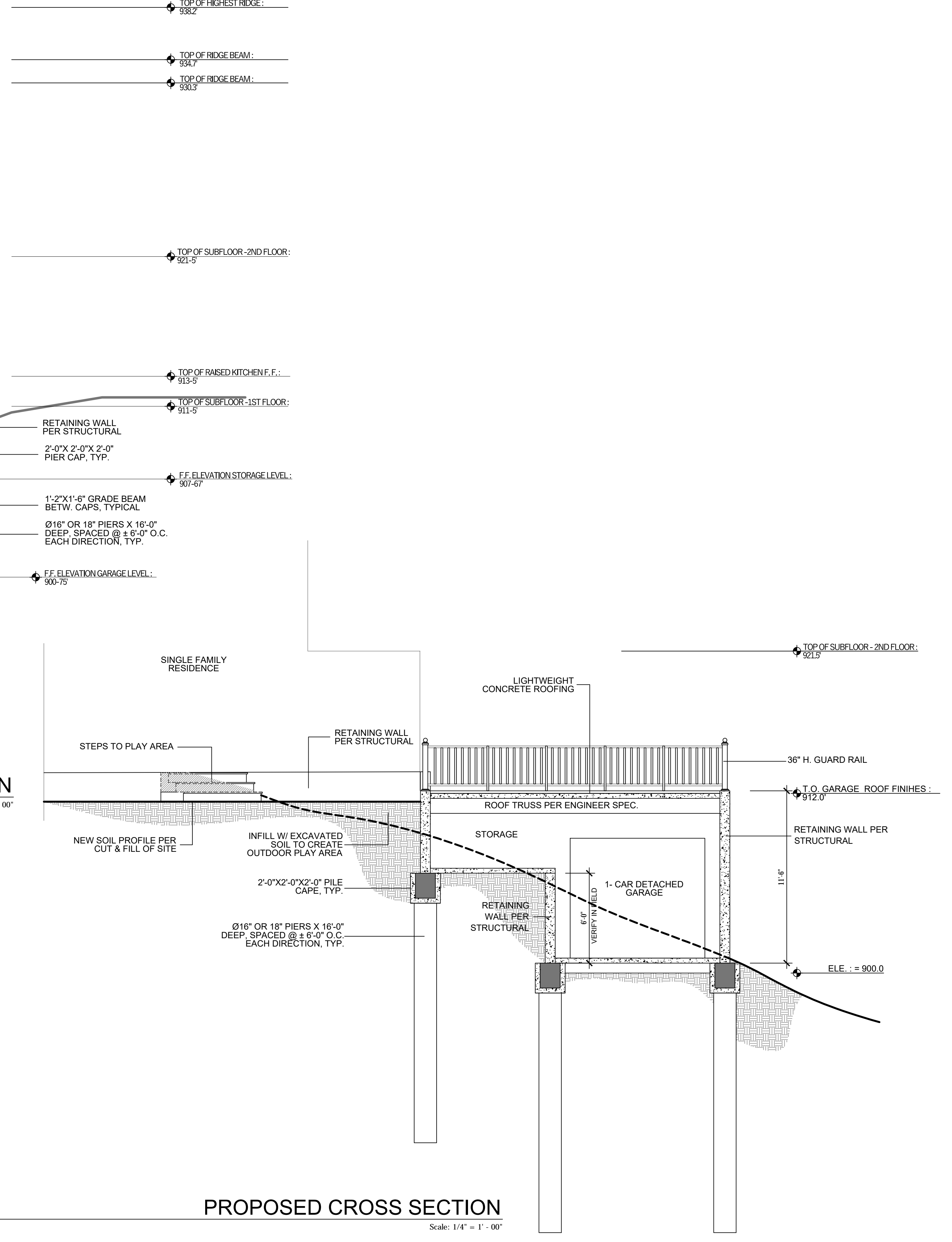
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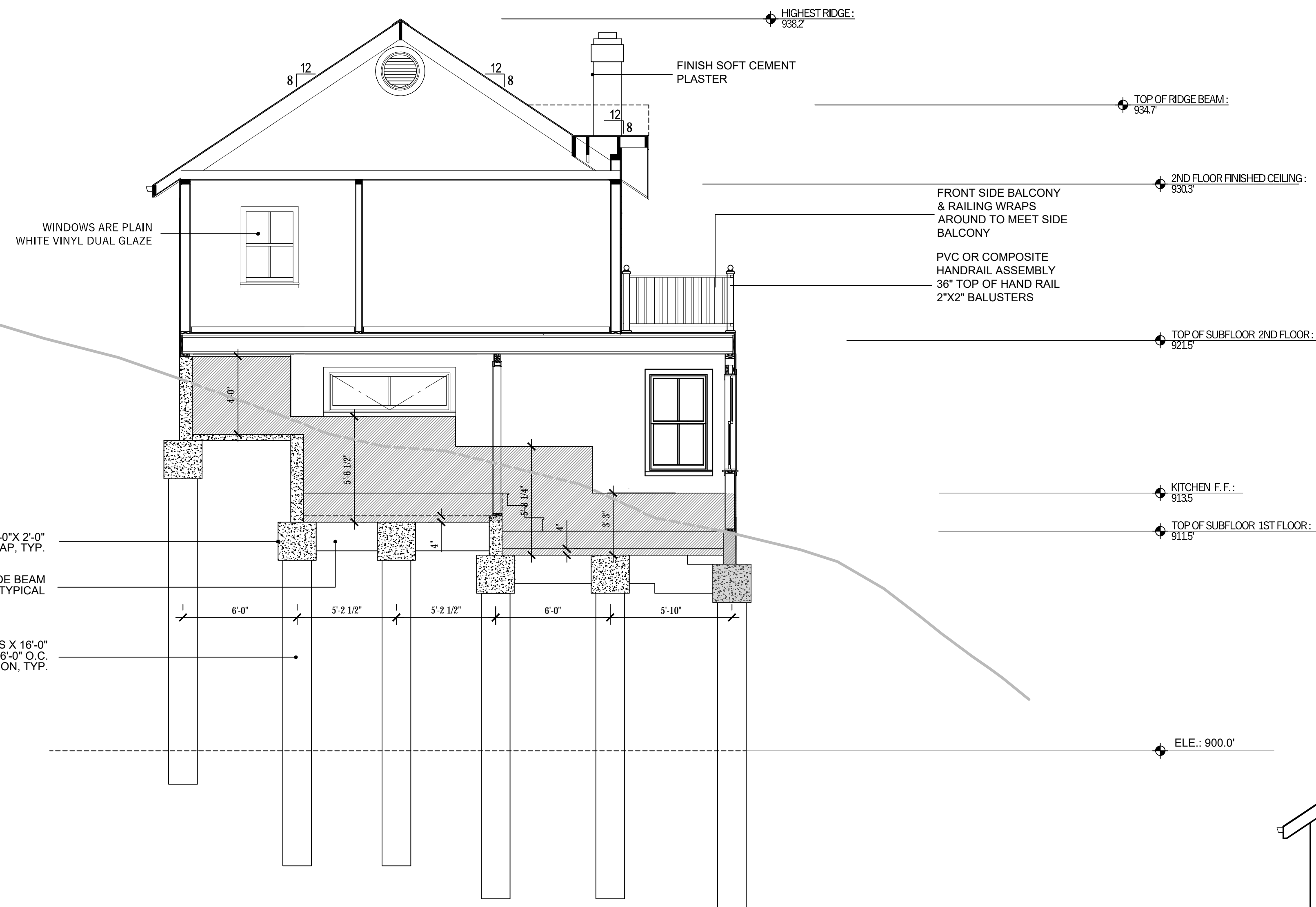
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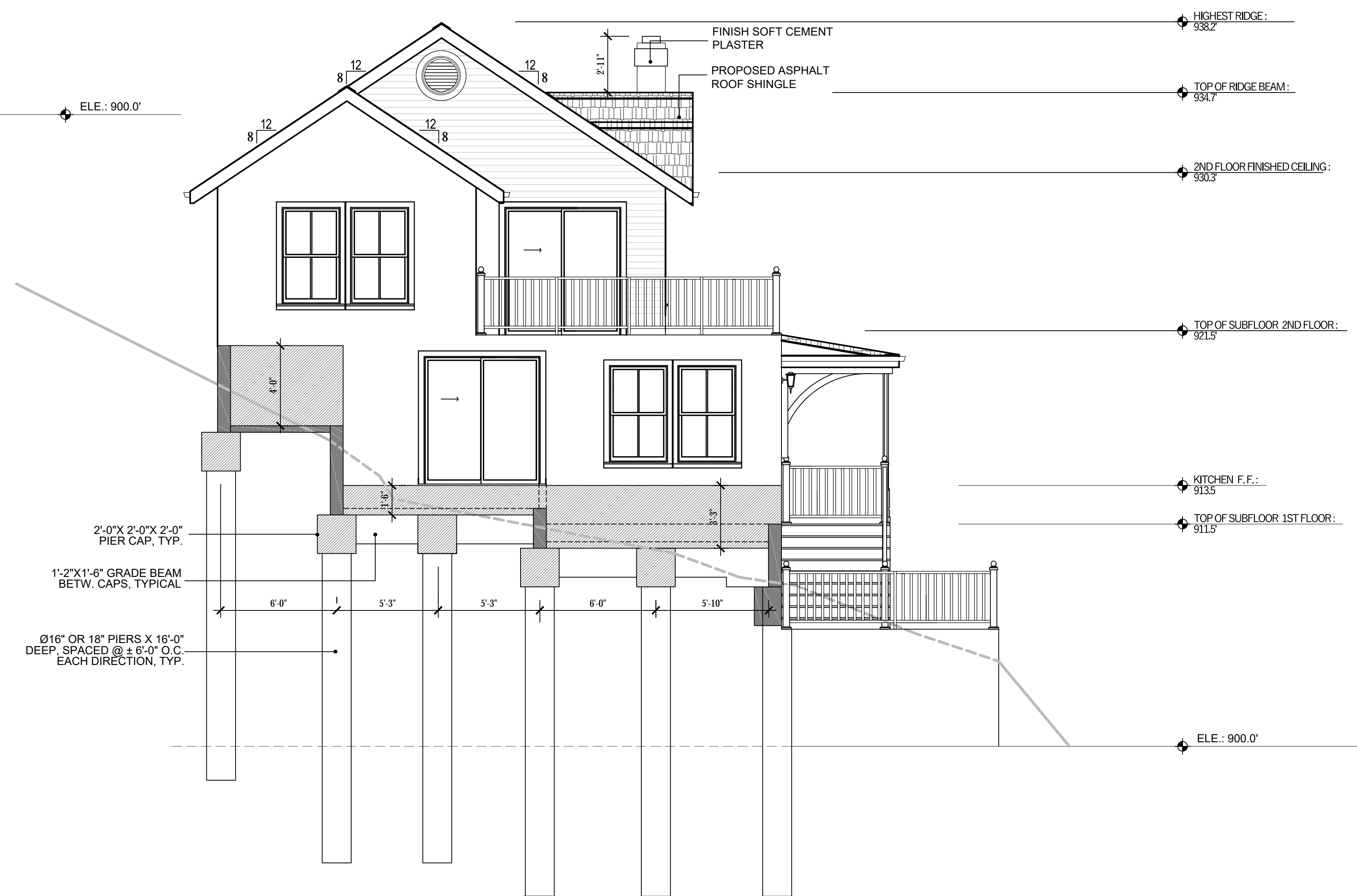
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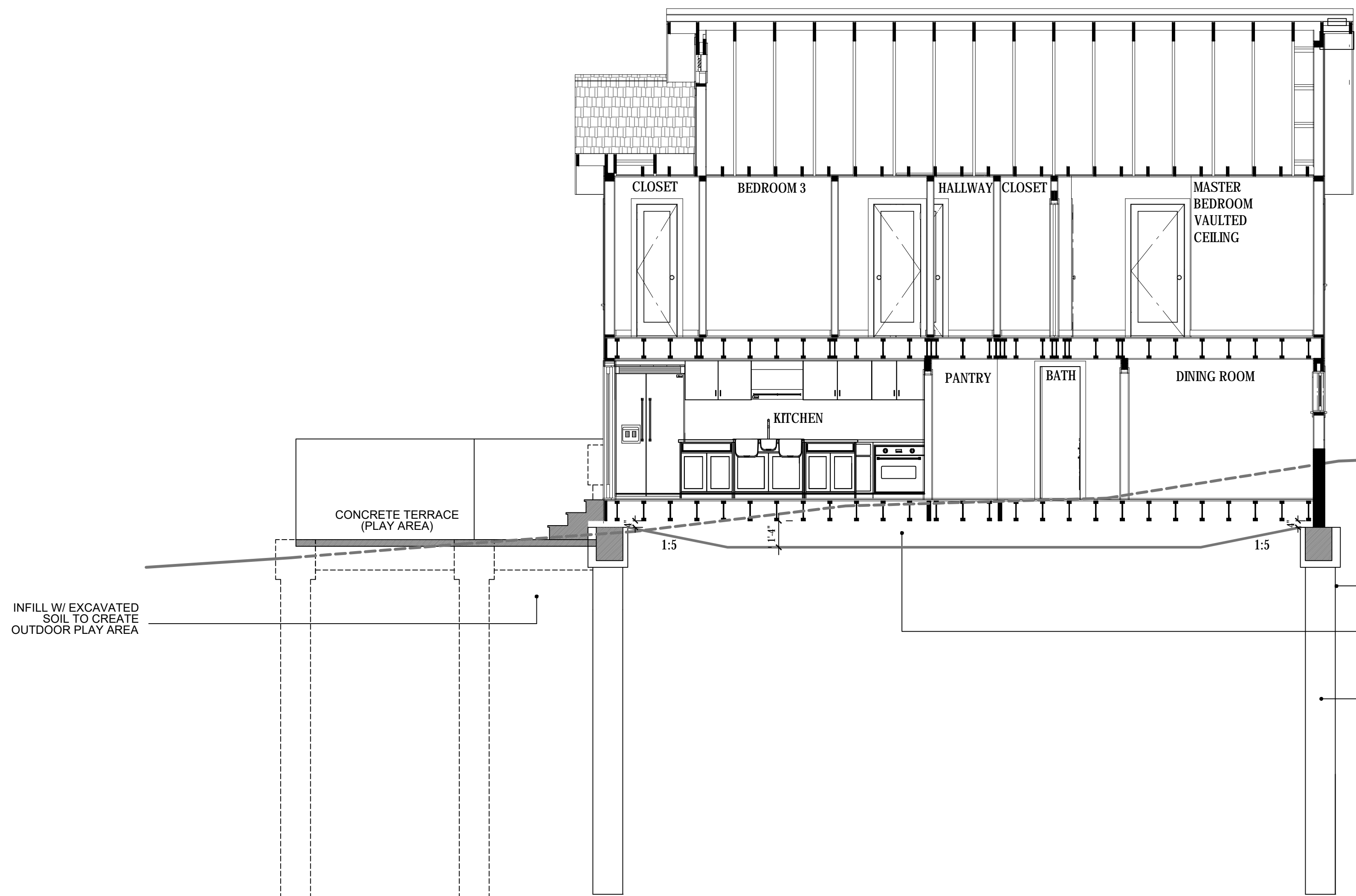
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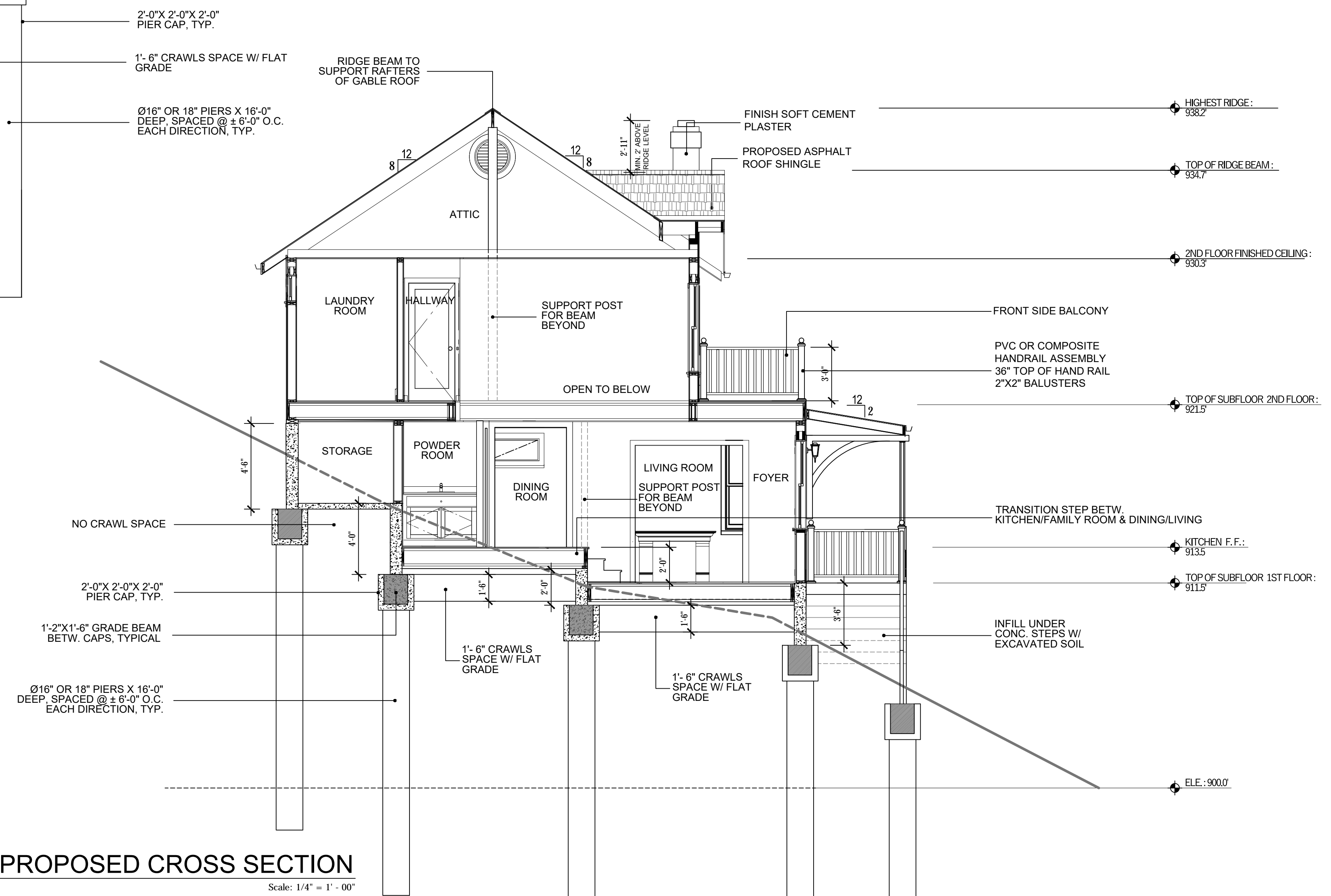
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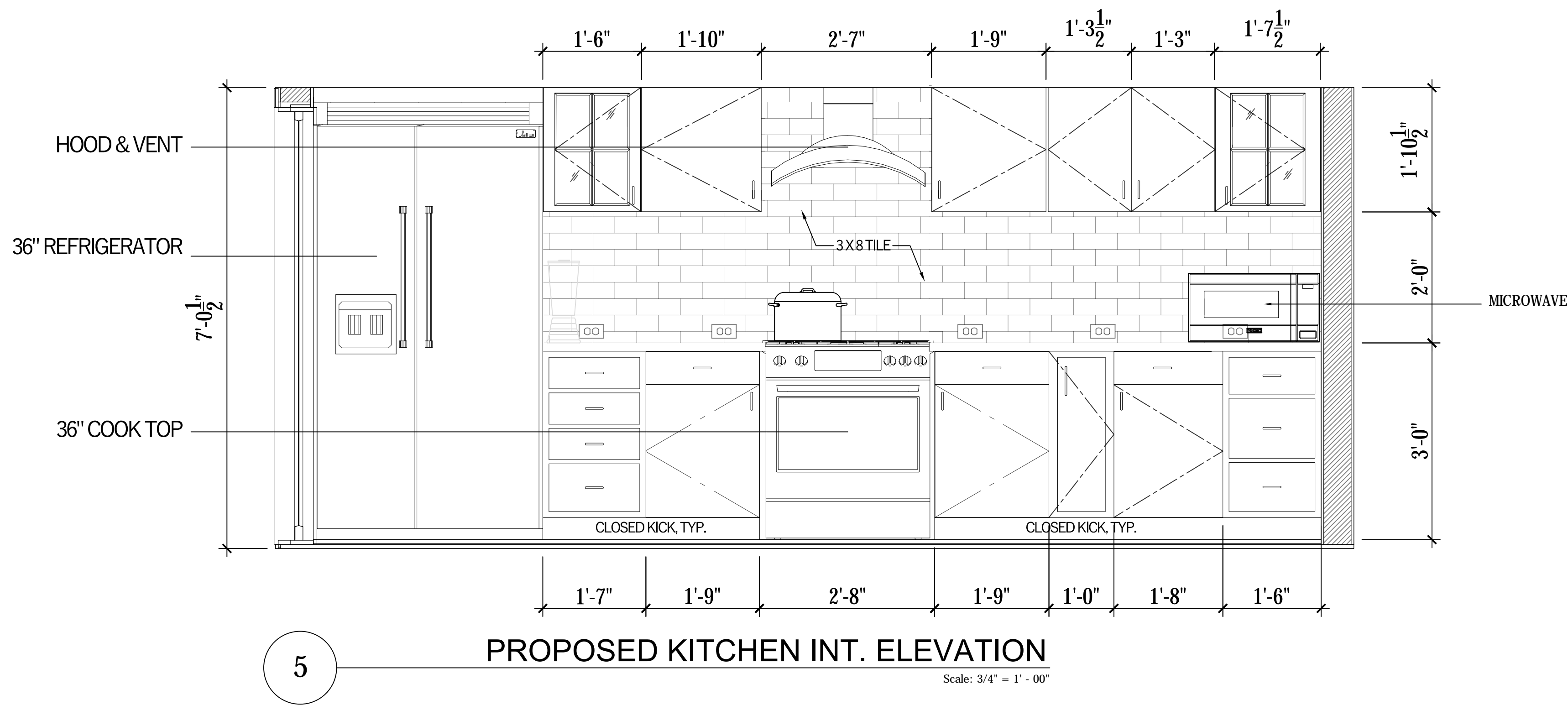
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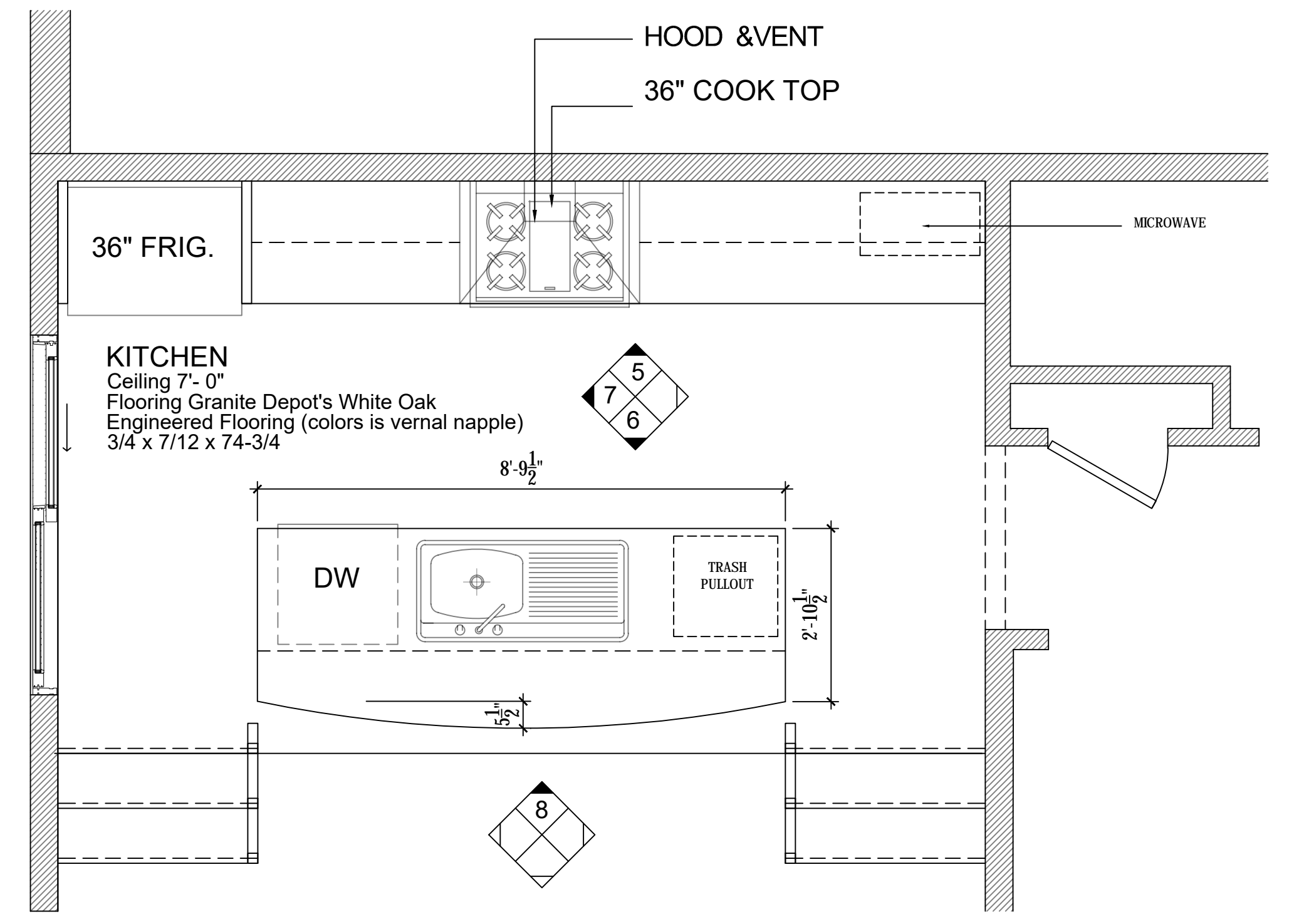
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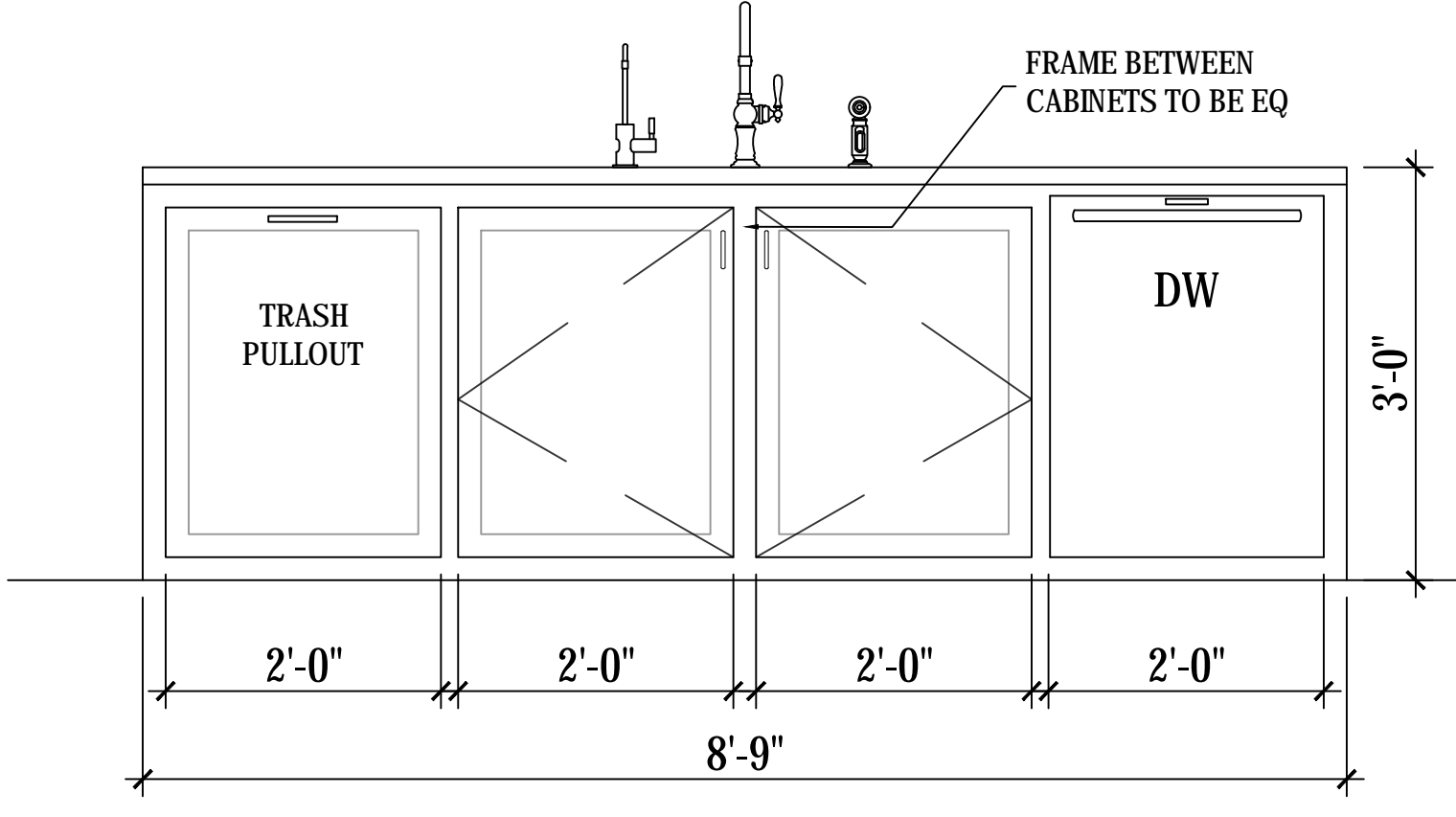
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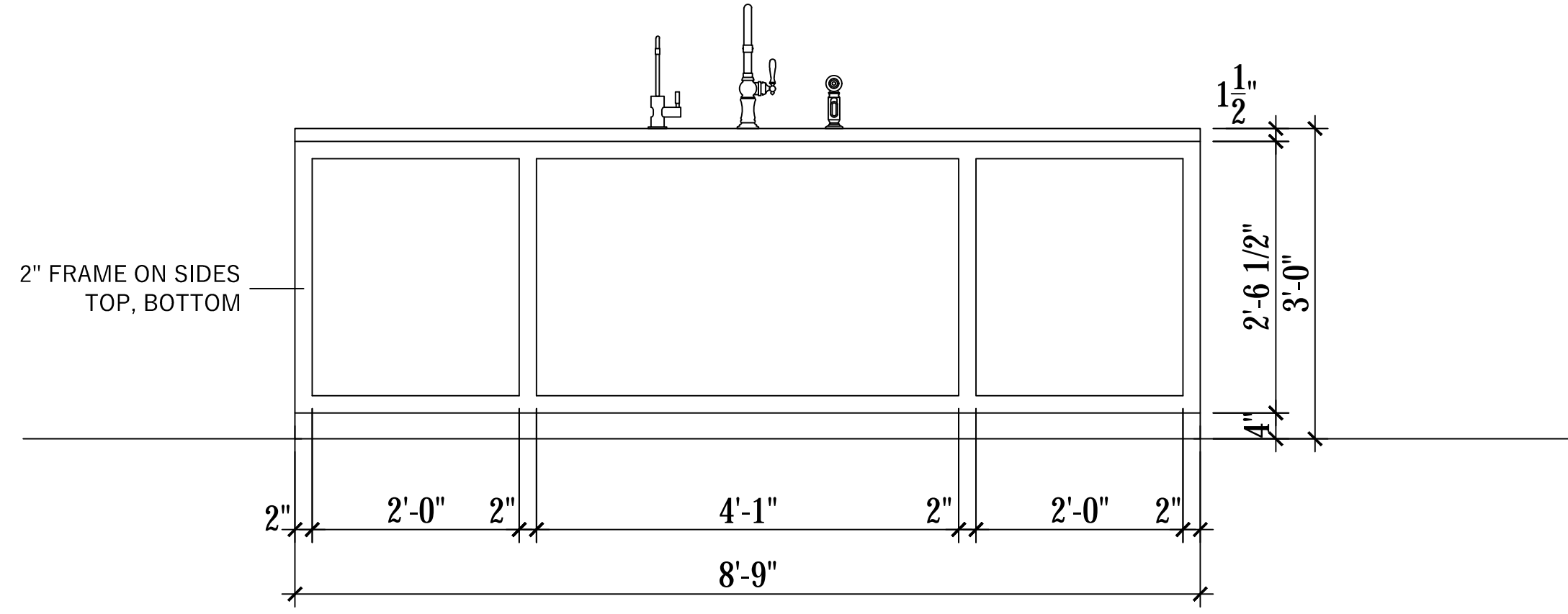
5 PROPOSED KITCHEN INT. ELEVATION
Scale: 3/4" = 1' - 00"



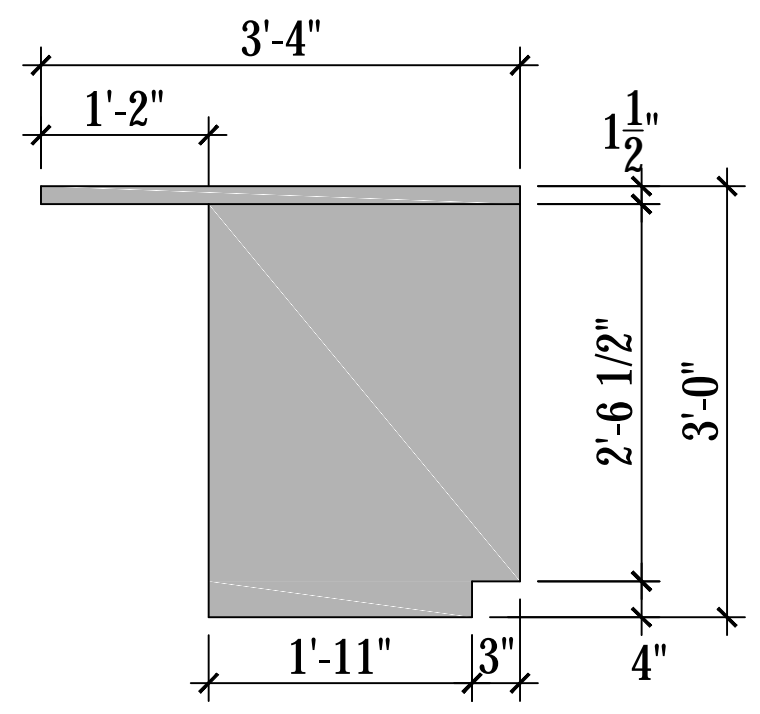
3 PROPOSED KITCHEN PLAN
Scale: 1/2" = 1' - 00"



6 PROPOSED KITCHEN ISLAND
Scale: 3/4" = 1' - 00"



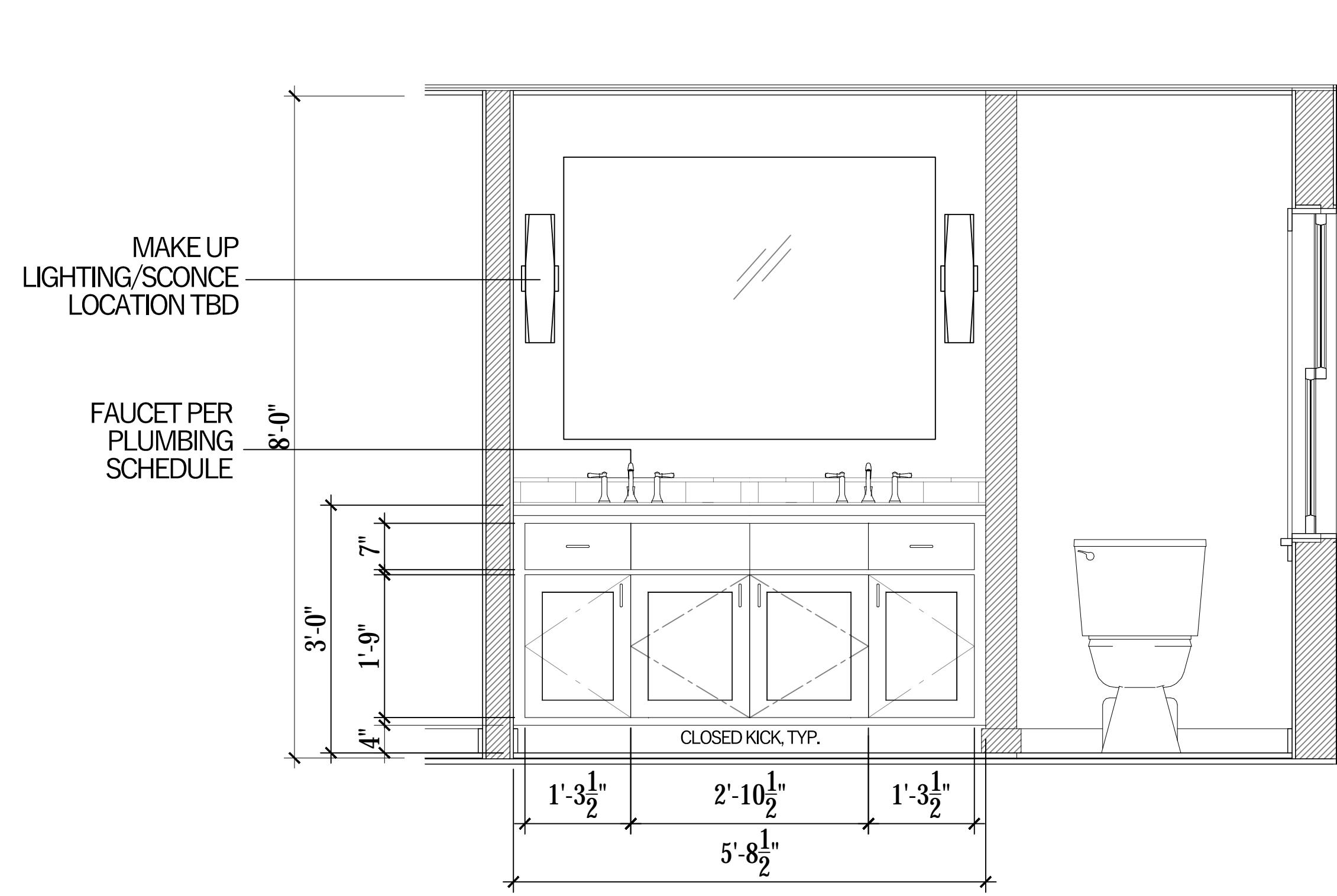
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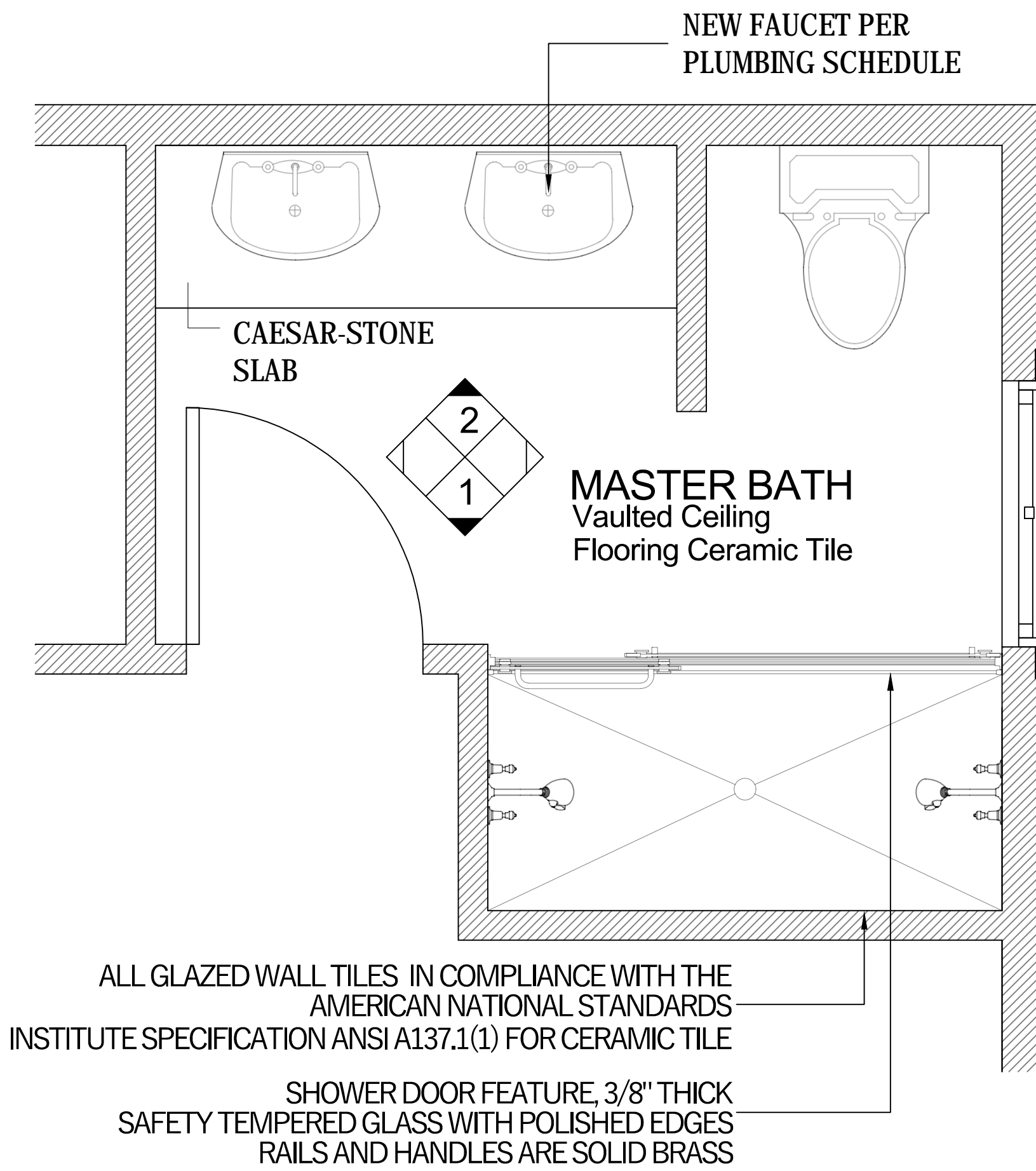
8 PROPOSED KITCHEN ISLAND
Scale: 3/4" = 1' - 00"

KITCHEN AND CABINET NOTES:
 ALL CABINETS IN MAPLE CONFIRM COLOR WITH HOME OWNER PRIOR TO ORDERING.
 CONFIRM DOOR & DRAWER STYLES WITH HOME OWNER PRIOR TO ORDERING.
 INSTALL HARDWARE ON SITE.
 INSTALL CROWN MOLDING ON SITE; MATCH CABINET COLOR; CONFIRM PROFILE AND DIMENSION WITH HOME OWNER.
 CUT OVEN OPENING ON SITE. SEE APPLIANCE SPECIFICATIONS.
 INSTALL HOOD AND ALL APPLIANCES PER MANUFACTURER SPECIFICATIONS.
 ALL APPLIANCES TO BE ON DEDICATED CIRCUITS.
 USE MIN 6" DUCT FOR HOOD.
 CONFIRM FINAL MATERIALS FOR BACK SPLASH AND COUNTERTOP WITH HOME OWNER PRIOR TO ORDE



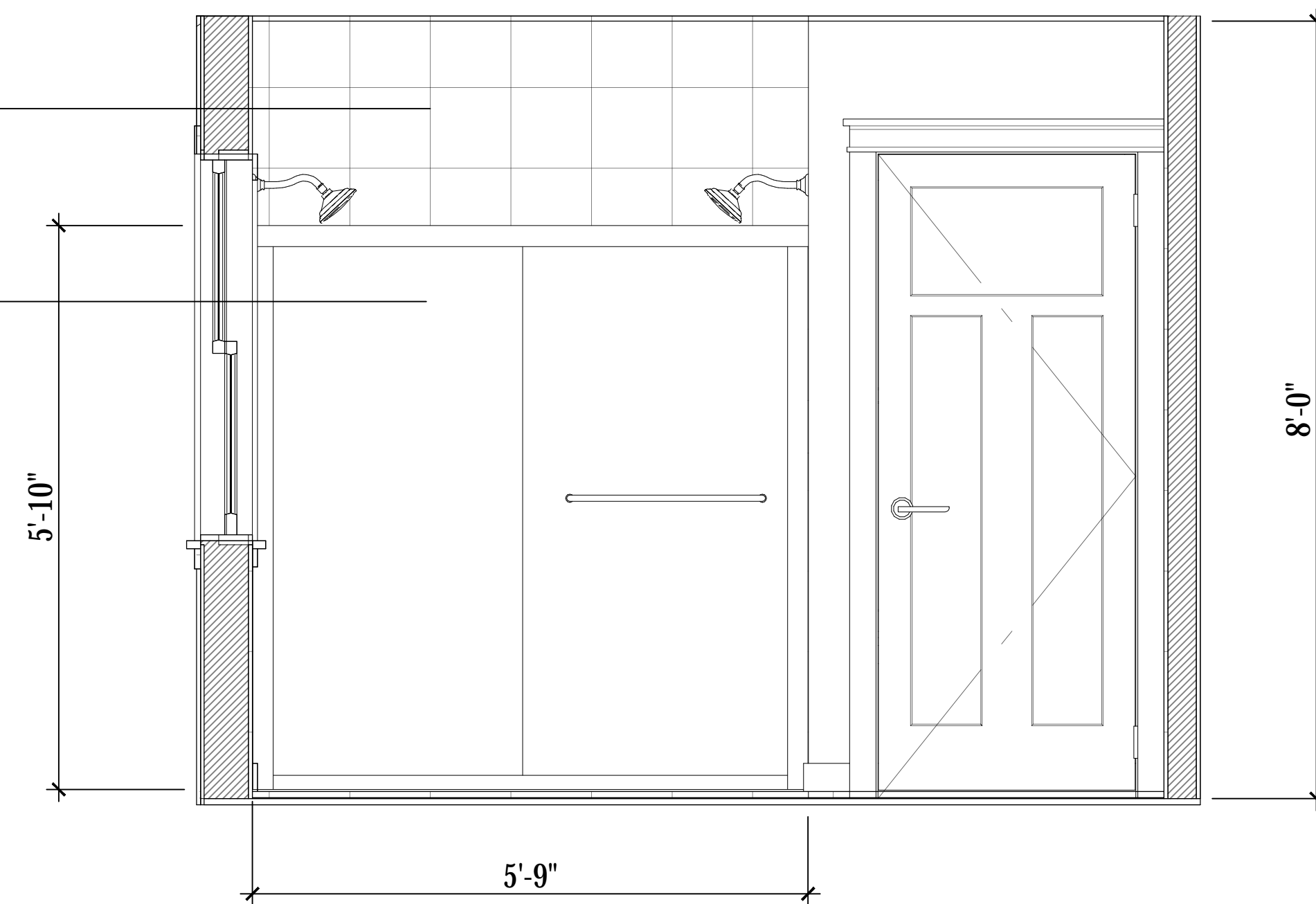


2 PROPOSED MASTER BATH INT. ELEVATION
Scale: 1/2" = 1' - 00"



ALL GLAZED WALL TILES IN COMPLIANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE SPECIFICATION ANSI A137.1(1) FOR CERAMIC TILE

SHOWER DOOR FEATURE 3/8" THICK SAFETY TEMPERED GLASS WITH POLISHED EDGES RAILS AND HANDLES ARE SOLID BRASS



1 PROPOSED MASTER BATH SHOWER ELEVATION
Scale: 1/2" = 1' - 00"

RESIDENTIAL VENTILATION REQUIREMENTS:

KITCHENS REQUIRE EXHAUST FANS WITH A MINIMUM 100 CFM DUCTED TO THE EXTERIOR. DETAIL COMPLIANCE BY INCLUDING A COMPLYING EXHAUST FAN OR A DUCTED RANGE HOOD TO THE EXTERIOR.

BATHROOMS REQUIRE EXHAUST FANS (MINIMUM 50 CFM) TO BE DUCTED TO THE EXTERIOR. A BATHROOM IS DEFINED "AS A ROOM WITH A BATHTUB, SHOWER, OR SPA OR SOME SIMILAR SOURCE OF MOISTURE".

RESIDENTIAL BATHROOM EXHAUST FANS SHALL BE ENERGY STAR RATED AND SHALL BE CONTROL BY A HUMIDISTAT CAPABLE OF AN ADJUSTMENT BETWEEN 50 AND 80% HUMIDITY. CALGREEN 4.506.1.

EXCEPTION: CONTROL BY A HUMIDISTAT IS NOT REQUIRED IF THE BATHROOM EXHAUST FAN IS ALSO THE DWELLING WHOLE HOUSE VENTILATION.

MECHANICAL WHOLE HOUSE VENTILATION MUST BE PROVIDED. IDENTIFY THE FAN PROVIDING THE WHOLE HOUSE VENTILATION (COMPLETE WITH CFM) ON THE FLOORPLANS. FOR ADDITIONS 1,000 SQUARE FEET OR LESS, WHOLE HOUSE VENTILATION IS NOT REQUIRED. FOR ADDITIONS OVER 1,000 SQUARE FEET, THE WHOLE HOUSE VENTILATION CFM SHALL BE BASED UPON THE ENTIRE (EXISTING AND ADDITION) SQUARE FOOTAGE, NOT JUST THE ADDITION.

ALL FANS INSTALLED TO MEET ALL OF THE PRECEDING REQUIREMENTS MUST BE SPECIFIED AT A NOISE RATING OF A MAXIMUM 1 "SONE" (FOR THE CONTINUOUS USE CALCULATION) OR 3 "SONE" (FOR THE INTERMITTENT USE CALCULATION).



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PROPOSED MASTER BATHROOM INTERIOR ELEVATION

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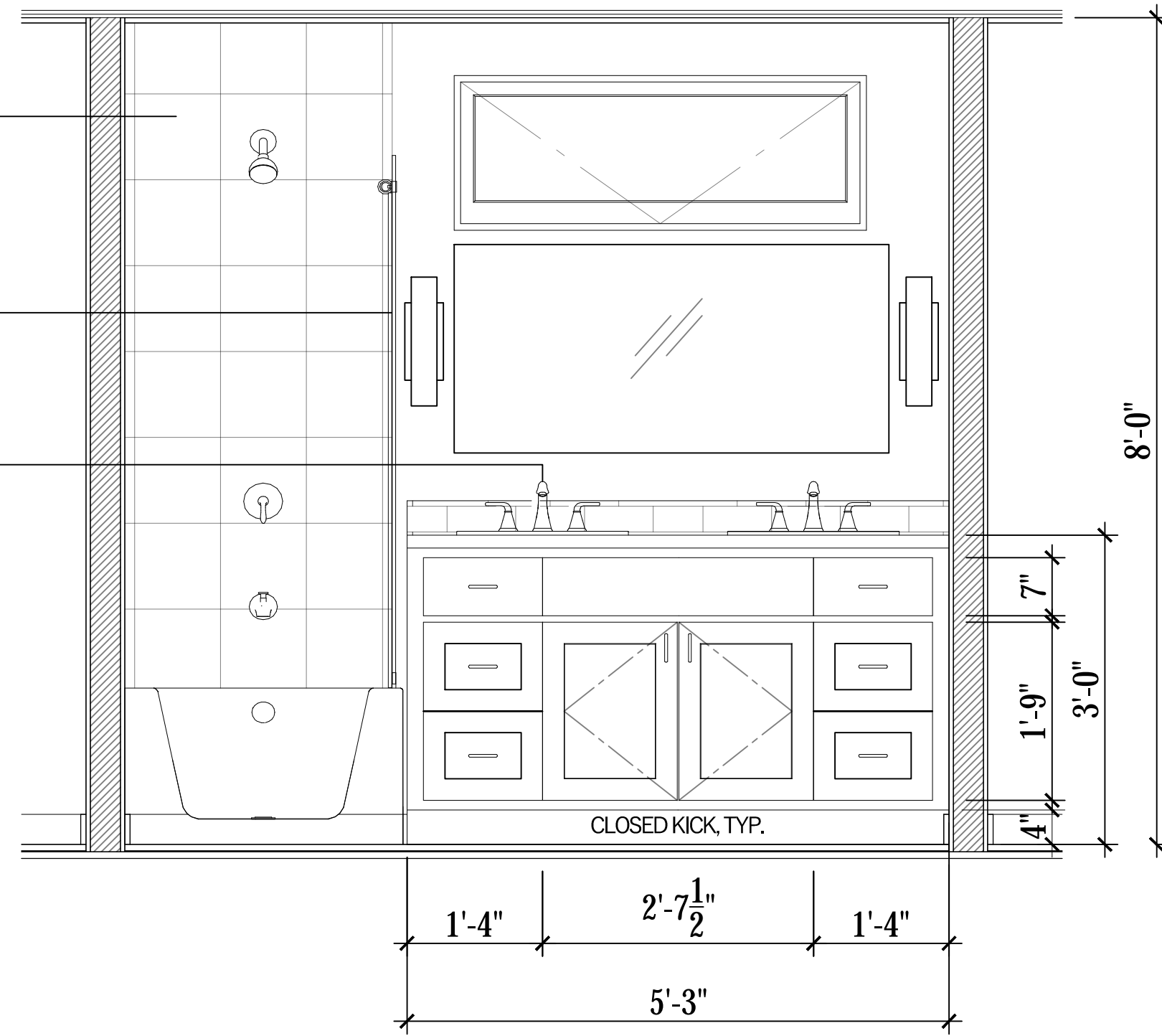
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ALL GLAZED WALL TILES IN COMPLIANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE SPECIFICATION ANSI A137.1(1) FOR CERAMIC TILE

SHOWER DOOR FEATURE 3/8" THICK SAFETY TEMPERED GLASS

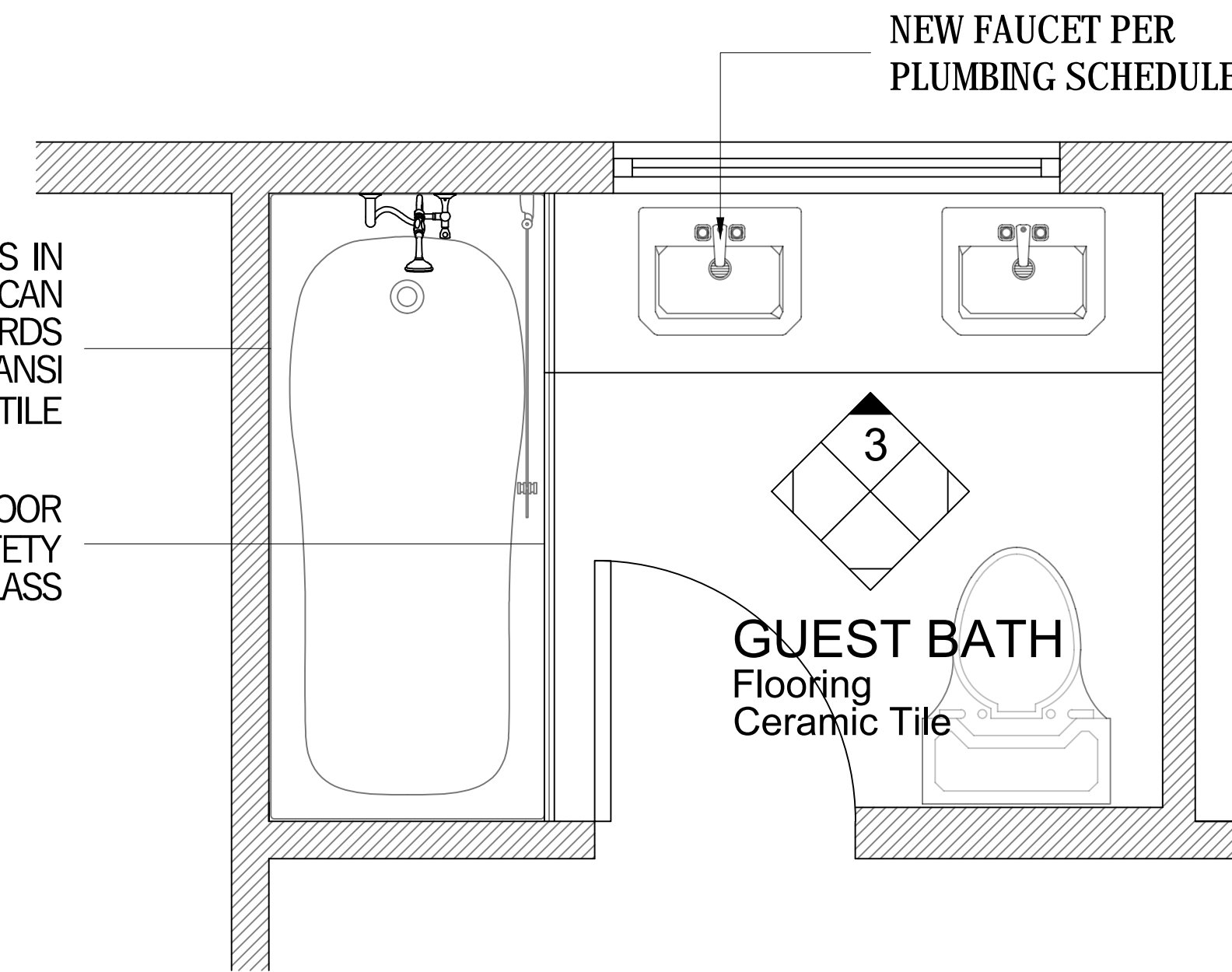
FAUCET PER PLUMBING SCHEDULE



3 PROPOSED GUEST BATH INT. ELEVATION
Scale: 3/4" = 1' - 00"

ALL GLAZED WALL TILES IN COMPLIANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE SPECIFICATION ANSI A137.1(1) FOR CERAMIC TILE

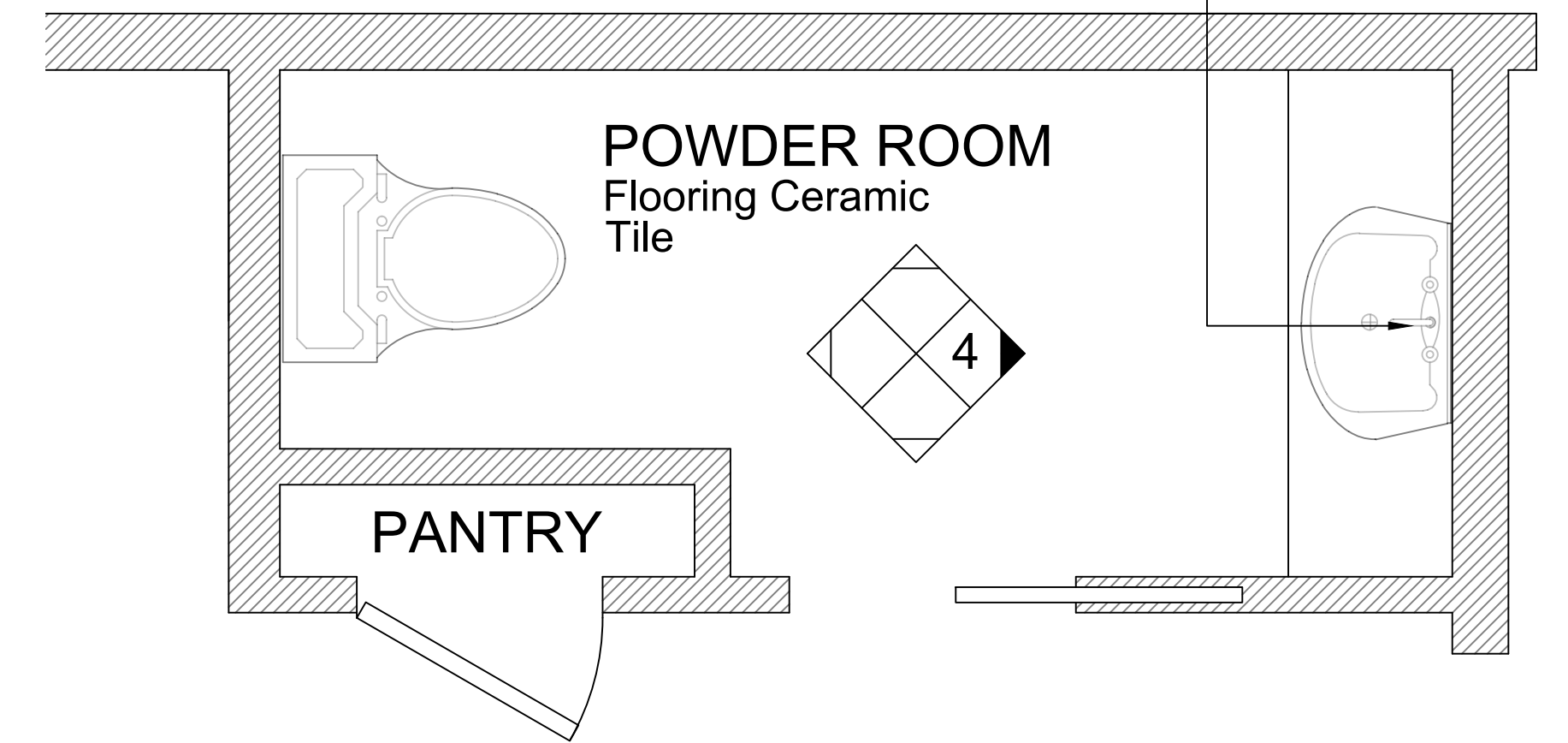
SHOWER DOOR FEATURE 3/8" THICK SAFETY TEMPERED GLASS



9 PROPOSED GUEST BATHROOM PLAN
Scale: 3/4" = 1' - 00"

NEW FAUCET PER PLUMBING SCHEDULE

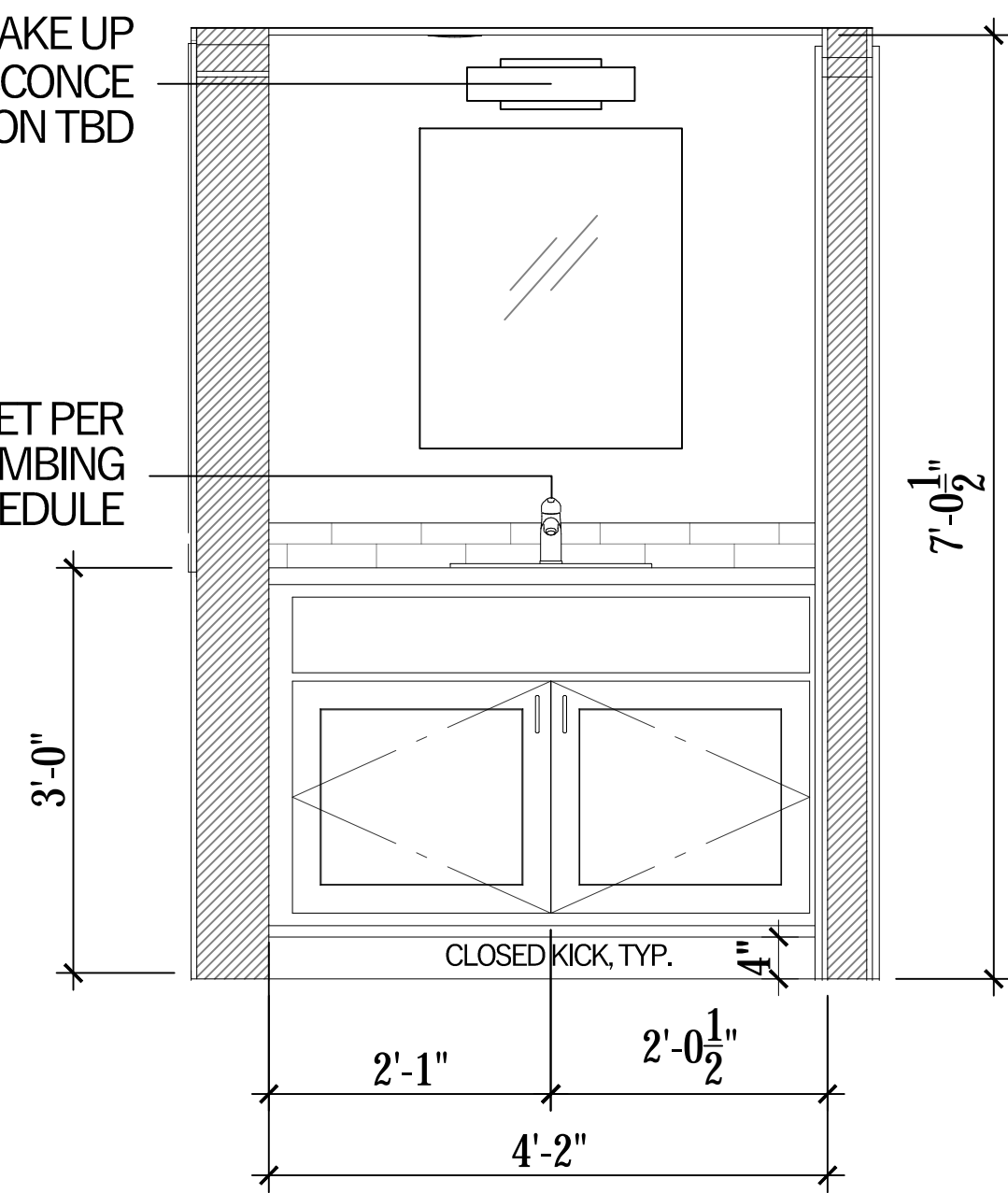
POWDER ROOM
Flooring Ceramic Tile



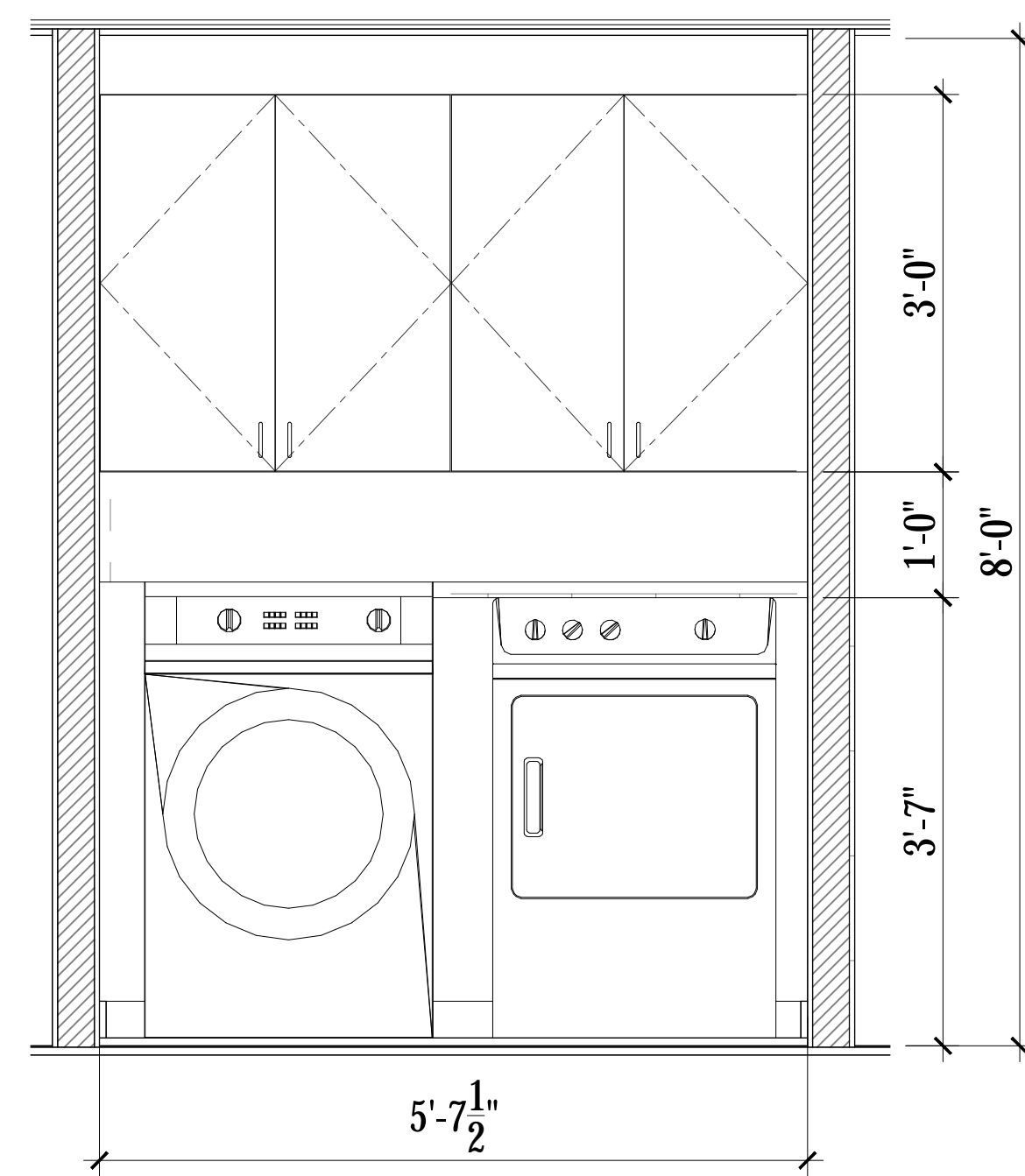
10 PROPOSED POWDER ROOM PLAN
Scale: 3/4" = 1' - 00"

MAKE UP LIGHTING/SCONCE LOCATION TBD

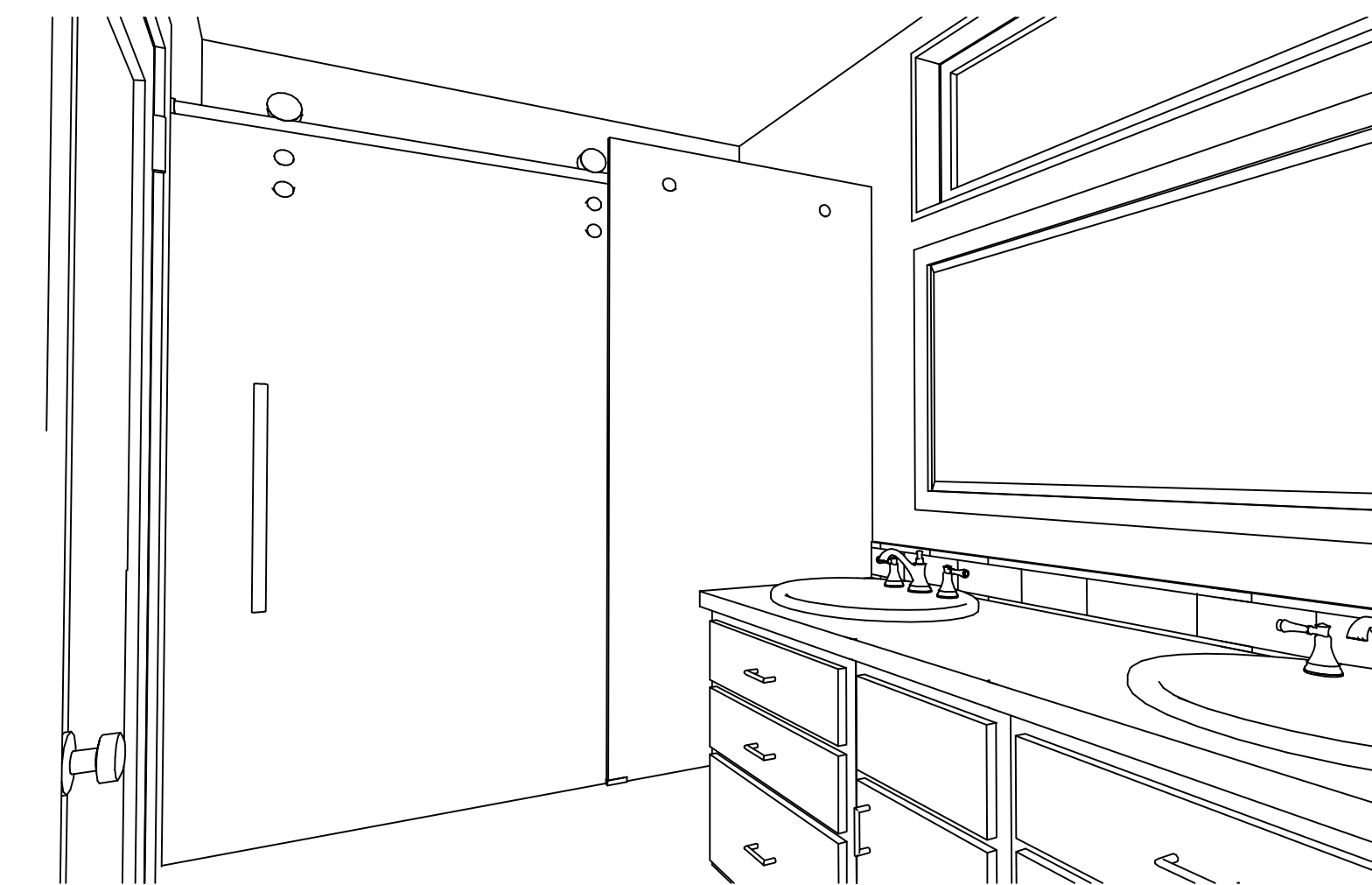
FAUCET PER PLUMBING SCHEDULE



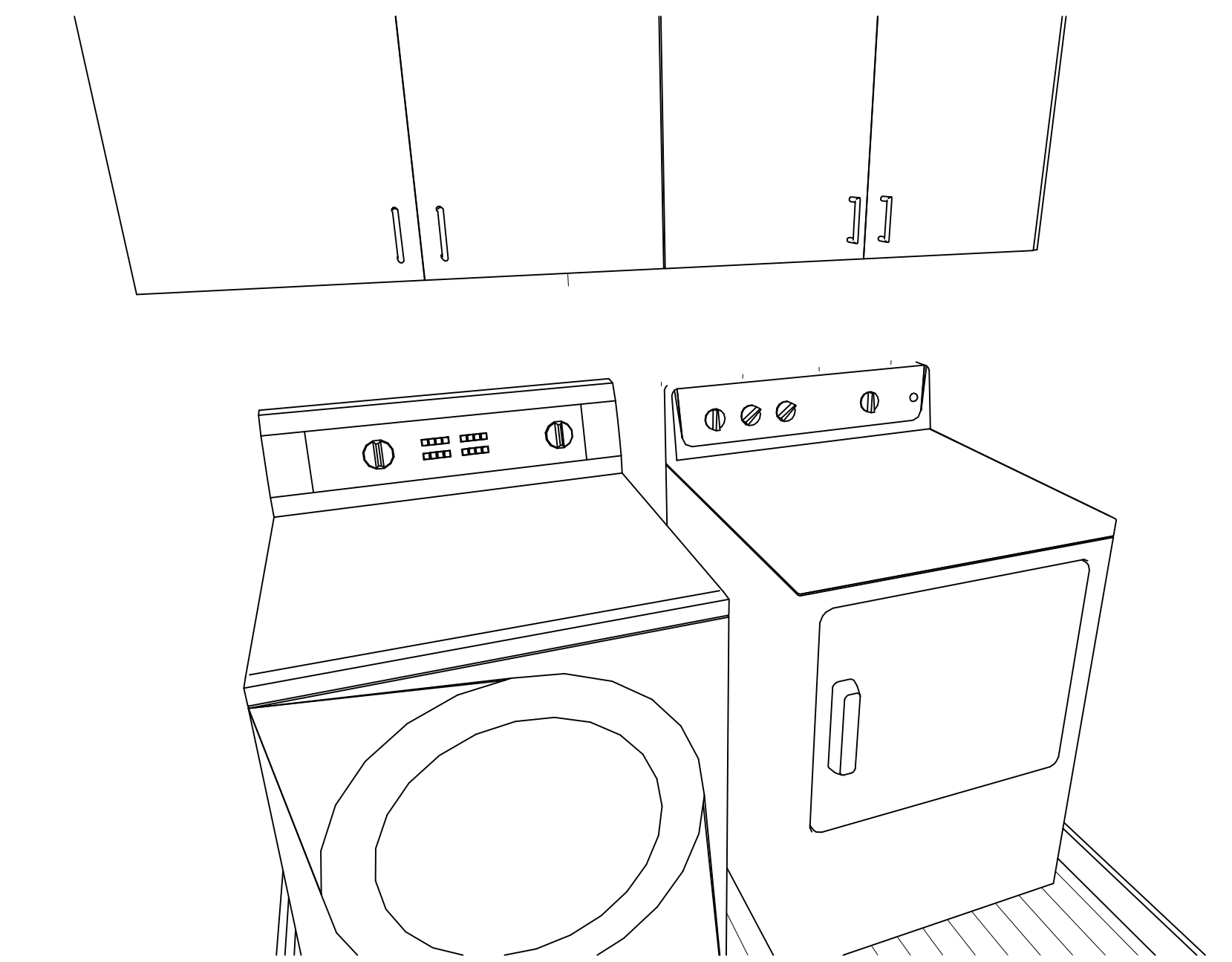
4 PROPOSED POWDER ROOM ELEV.
Scale: 3/4" = 1' - 00"



PROPOSED LAUNDRY ROOM ELEVATION
Scale: 3/4" = 1' - 00"



PROPOSED GUEST BATH ISO.
NTS



PROPOSED LAUNDRY ROOM ISO.
NTS



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PROPOSED BATHROOMS AND LAUNDRY CABINETS

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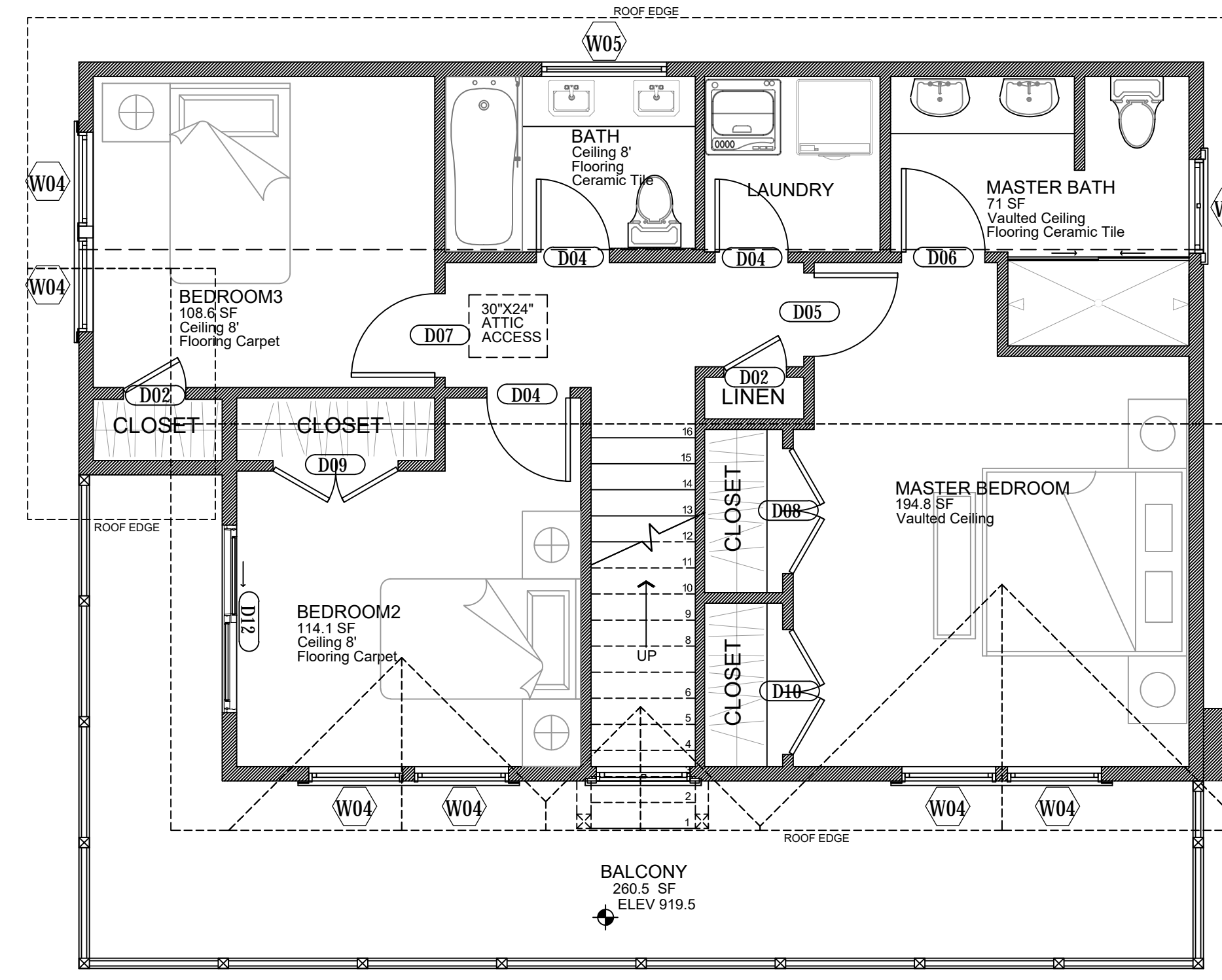
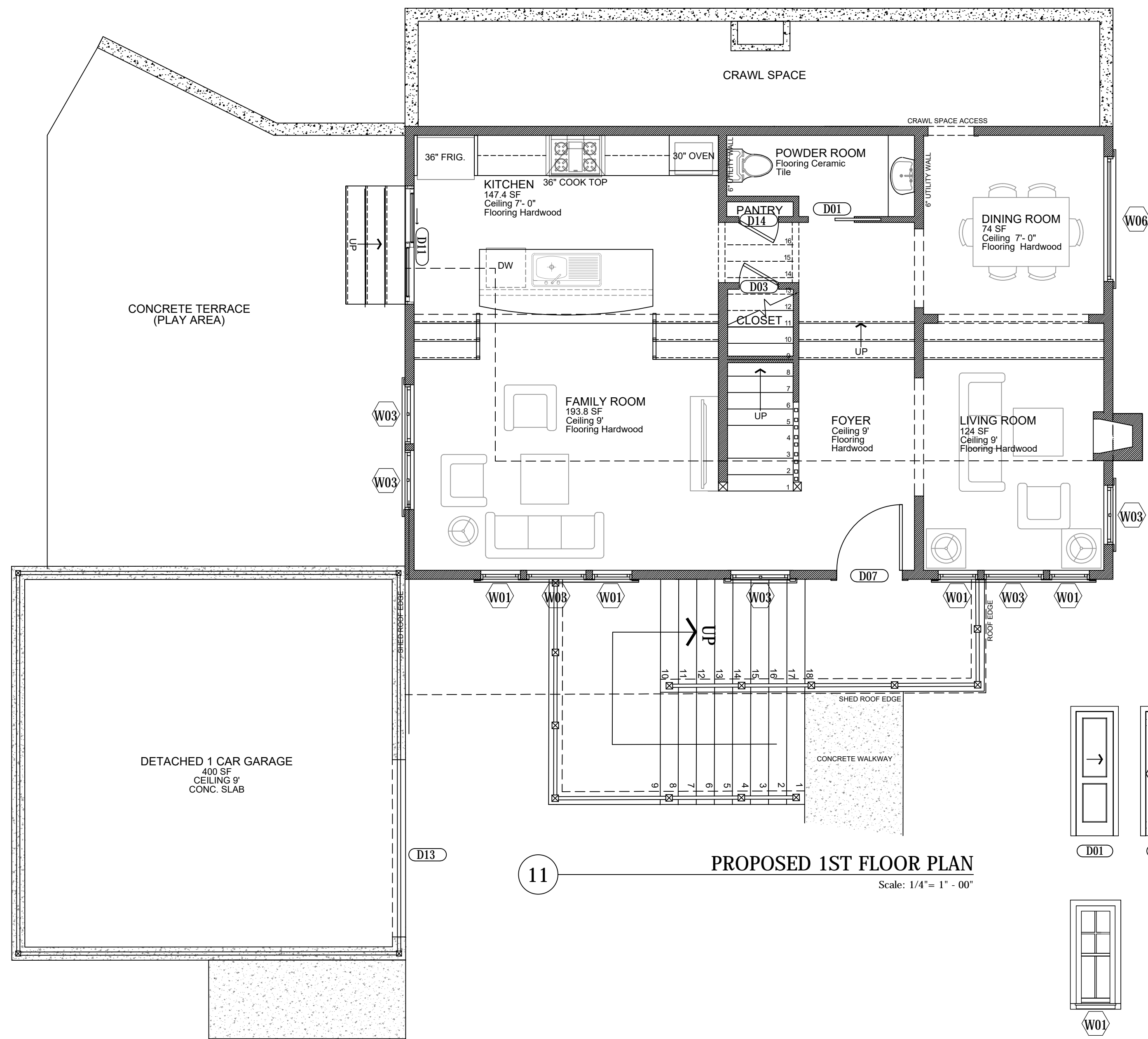
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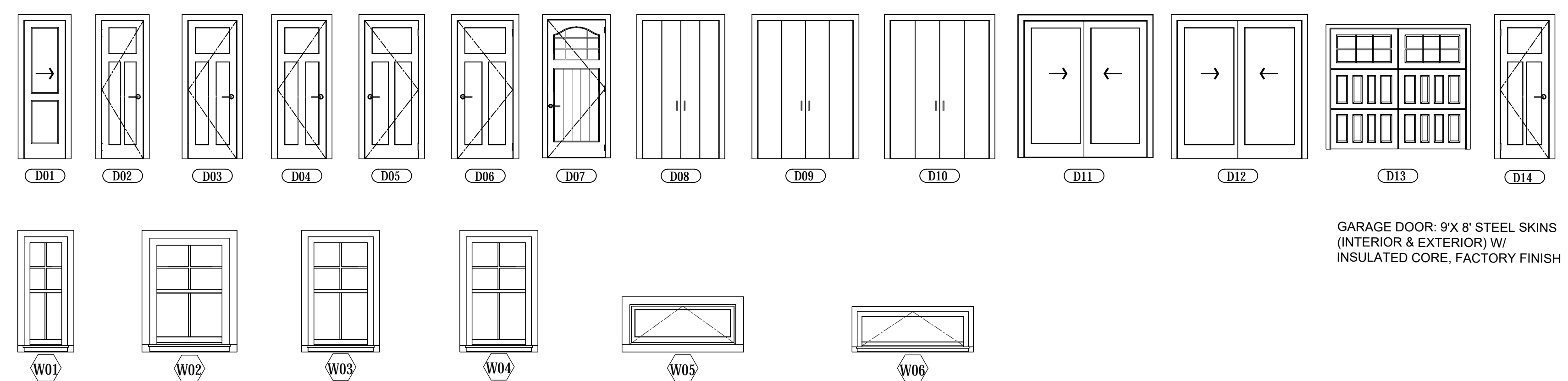
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DOOR AND WINDOW NOTES:

EVERY BEDROOM SHALL BE PROVIDED WITH AN EGRESS WINDOW WITH FINISH SILL HEIGHT NOT GREATER THAN 44" ABOVE THE FINISH FLOOR HEIGHT AND SHALL HAVE A MINIMUM OPENABLE AREA OF 5.7 SQ. FT. EGRESS WINDOWS SHALL NOT HAVE AN OPENABLE AREA LESS THAN 20" WIDE OR 24" HIGH. ALL WALK-THRU DOORS SHALL BE SOLID CORE. INTERIOR DOORS SHALL BE PAINTED. ENTRY DOOR TO BE DEFINED BY HOME OWNER PRIOR ORDERING. DOORS BETWEEN GARAGE AND LIVING AREA SHALL BE 1-3/4" TIGHT FITTING SOLID CORE DOORS WITH A RATING OF 60 MINUTES. DOOR SHALL BE SELF CLOSING. EXTERIOR EXIT DOORS WILL BE 36" MIN. NET CLEAR DOORWAY SHALL BE 32" MIN. DOOR SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. GLAZING IN DOORS SHALL BE DUAL PANE SAFETY GLASS WITH MIN. U-VALUE OF 0.60

GARAGE DOORS TO BE SECTIONAL, OVERHEAD DOORS



GARAGE DOOR: 9'X 8' STEEL SKINS (INTERIOR & EXTERIOR) W/ INSULATED CORE, FACTORY FINISH

DOOR SCHEDULE													
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	R/O	DESCRIPTION	HEADER	THICKNESS	CODE	MANUFACTURER	COMMENTS
D01	2068	1	1	2068 R	23 3/4"	80"	49 1/2"X82 1/2"	POCKET-DOOR P04	2X6X49 1/2" (2)	1 3/8"			
D02	2068	2	2	2068 L IN	24"	80"	26"X82 1/2"	HINGED-PANEL	2X6X29" (2)	1 3/8"			
D03	2468	1	1	2468 L IN	28"	80"	30"X82 1/2"	HINGED-PANEL	2X6X30" (2)	1 3/8"			
D04	2468	3	2	2468 L IN	28"	80"	30"X82 1/2"	HINGED-PANEL	2X6X33" (2)	1 3/8"			
D05	2768	1	2	2768 L IN	30 15/16"	80"	32 15/16"X82 1/2"	HINGED-PANEL	2X6X35 15/16" (2)	1 3/8"			
D06	2868	2	2	2868 L IN	32"	80"	34"X82 1/2"	HINGED-PANEL	2X6X37" (2)	1 3/8"			
D07	3480	1	1	3480L EX	40"	96"	42"X99"	EXT. HINGED-DOOR PS01	2X6X45" (2)	1 3/4"			
D08	3868	1	2	3868 L/R	44"	80"	46"X82 1/2"	4 DR. BIFOLD-SLAB	2X6X49" (2)	1 3/8"			
D09	4768	1	2	4768 L/R	55"	80"	57"X82 1/2"	4 DR. BIFOLD-SLAB	2X8X60" (2)	1 3/8"			
D10	4968	1	2	4968 L/R	57"	80"	59"X82 1/2"	4 DR. BIFOLD-SLAB	2X8X62" (2)	1 3/8"			
D11	6068	1	1	6068 R EX	72"	80"	74"X83"	EXT. SLIDER-GLASS PANEL	2X10X74" (2)	1 3/4"			
D12	6068	1	2	6068 R IN	72"	80"	74"X82 1/2"	SLIDER-GLASS PANEL	2X10X77" (2)	1 3/4"			
D13	9080	1	1	9080	108"	96"	110"X99"	GARAGE-GARAGE DOOR CHD05	2X12X116" (2)	1 3/4"			
D14	2468	1	1	2468 R IN	28"	80"	30"X82 1/2"	HINGED-PANEL	2X6X30" (2)	1 3/8"			

WINDOW SCHEDULE													
NUMBER	LABEL	QTY	FLOOR	SIZE	WIDTH	HEIGHT	R/O	EGRESS	DESCRIPTION	HEADER	CODE	MANUFACTURER	COMMENTS
W01	2050DH	4	1	2050DH	24"	60"	25"X61"		DOUBLE HUNG	2X6X28" (2)			
W02	3040DH	1	2	3040DH	36"	48"	37"X49"		DOUBLE HUNG	2X6X40" (2)			
W03	3050DH	6	1	3050DH	36"	60"	37"X61"		DOUBLE HUNG	2X6X40" (2)			
W04	3050DH	7	2	3050DH	36"	60"	37"X61"		DOUBLE HUNG	2X6X40" (2)			
W05	4016HO	1	2	4016HO	48"	18"	49"X19"		SINGLE HOPPER	2X8X52" (2)			
W06	6420HO	1	1	6420HO	76"	24"	77"X25"		SINGLE HOPPER	2X10X80" (2)			

THE SCHEDULE SHEET PROVIDES DETAILS ON SPECIFIC COMPONENTS TO ASSURE COMPLIANCE WITH CERTIFICATION PROGRAMS LIKE THE ICC 700 NATIONAL GREEN BUILDING STANDARD, ENERGY STAR, OR LEED FOR HOMES.

DESIGN U-FACTOR = 0.35
DESIGN SHGC = 0.40
U-VALUE AND SOLAR HEAT GAIN COEFFICIENT (SHGC) MINIMUMS PER CLIMATE ZONE 3A

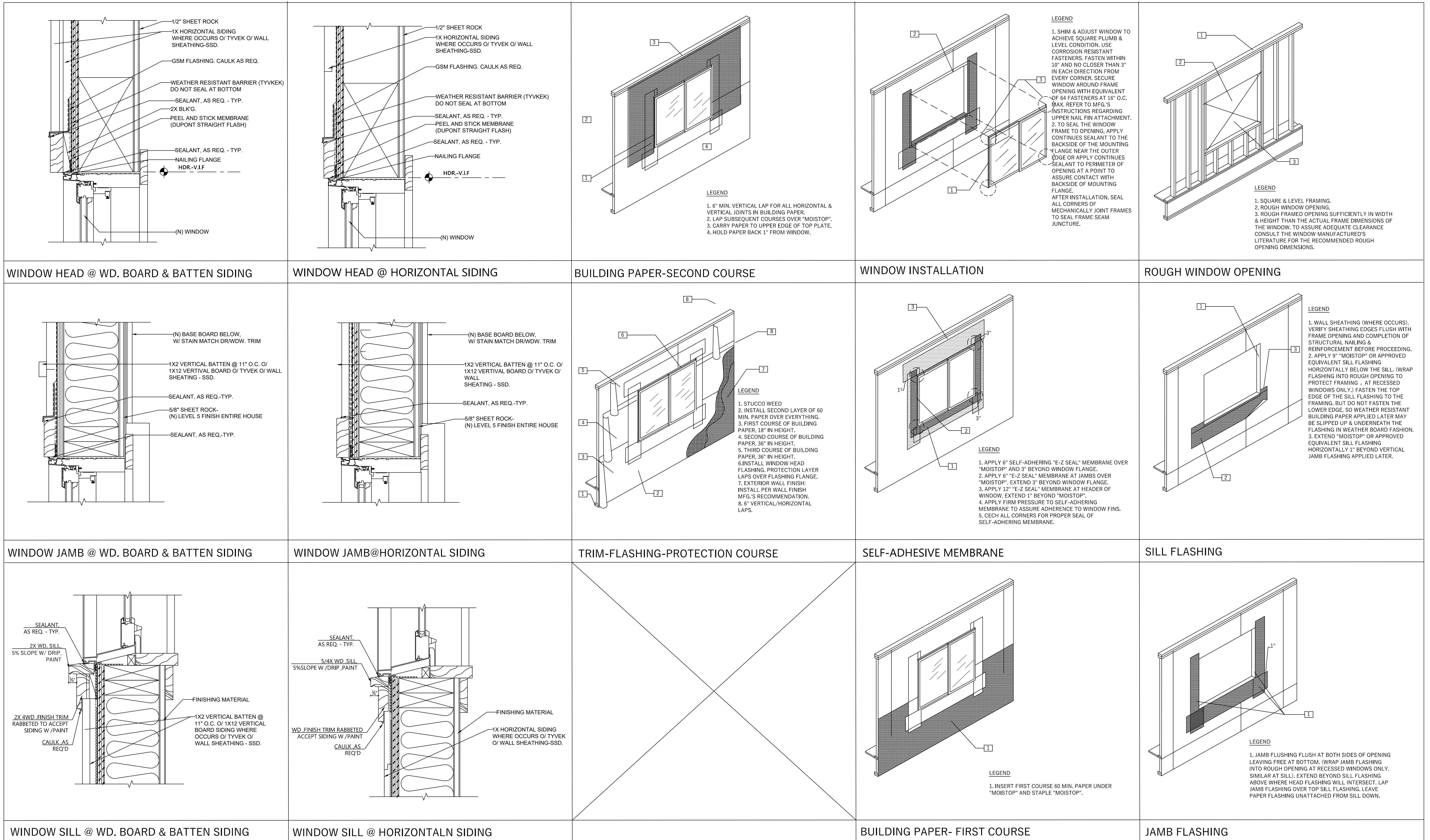
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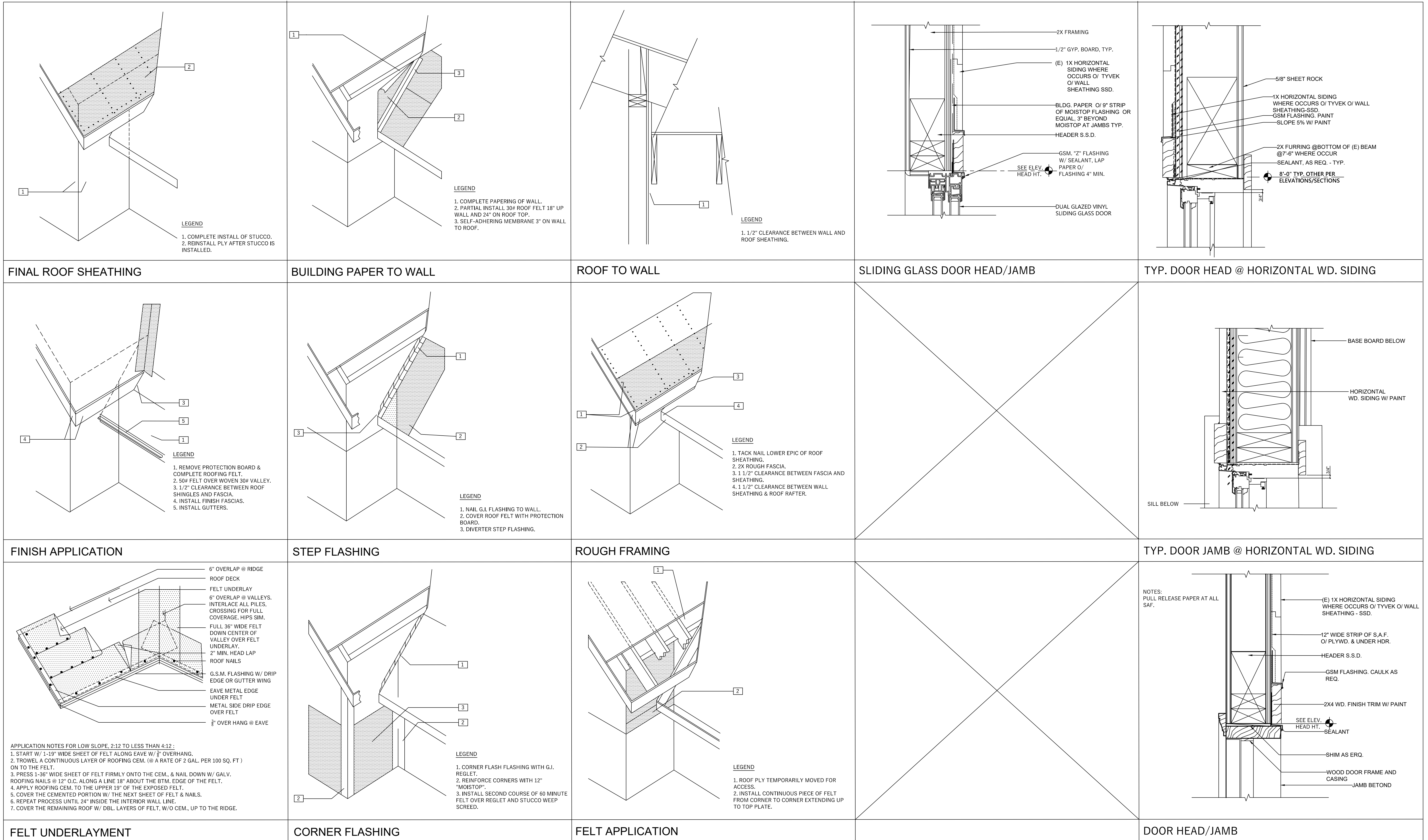


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BUILDING PAPER/ HOUSE WRAP DETAILS AROUND
WALL TO ROOF TRANSITION

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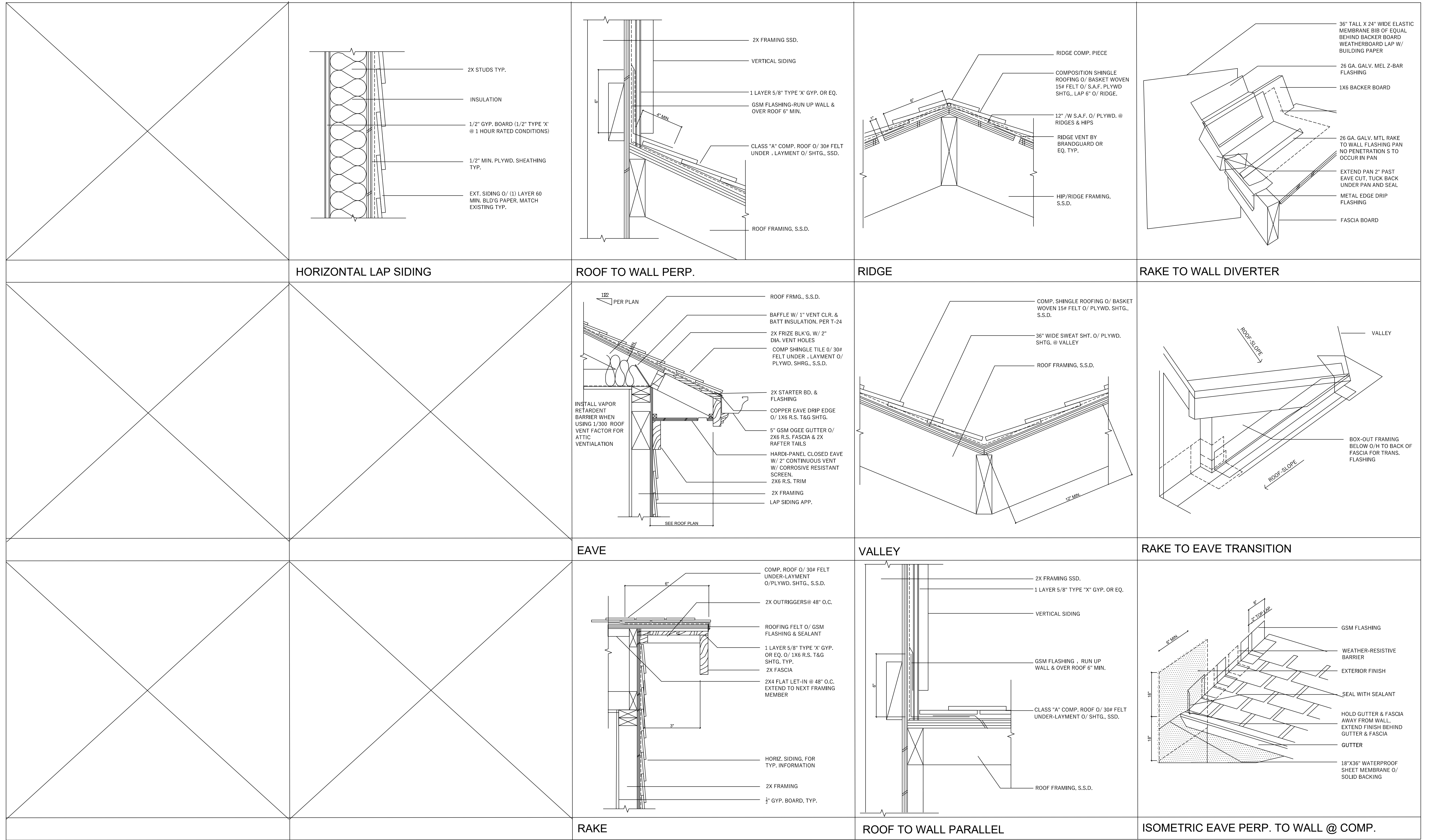
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 BUILDING PAPER/ HOUSE WRAP DETAILS AT
 WALL TO ROOF TRANSITION

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PROPOSED GRADING PLAN
 Scale: 1/8"=1'-00"

GRADING PLAN SHEET NOTES

EROSION CONTROL NOTES:

1. INSTALL SILT FENCE PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
2. MINIMIZE SITE DISTURBANCE BY TIGHT CONTROL OF EXCAVATION LIMITS.
3. ALL EXPOSED SOIL SHALL BE MULCHED WITH STRAW OR WOOD CHIPS TO MINIMIZE SOIL EROSION.
4. NO SOIL SHALL BE LEFT IN AN EXPOSED CONDITION. IT IS RECOMMENDED THAT THE CONTRACTOR MAINTAIN A STOCK PILE OF THIS MATERIAL ON SITE FOR QUICK APPLICATION.
5. HYDROSEED WITH A WOOD CELLULOSE FIBER MULCH APPLIED AT A RATE OF 2,000/ACRE.
6. USE AN ORGANIC TACKIFIER AT NO LESS THAN 150 W/ACRE OR PER MANUFACTURER'S RECOMMENDATION IF HIGHER.
7. APPLICATION OF TACKIFIER SHALL BE HEAVIER AT EDGES, IN VALLEYS AND AT CRESTS OF BANKS AND OTHER AREAS WHERE SEED CAN BE MOVED BY WIND OR WATER.
8. DISPERSION TRENCHES SHALL OVERFLOW ONTO NATIVE UNDISTURBED GROUND. NO SITE DISTURBANCE BELOW TRENCHES.

GRADING NOTES:

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.
2. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.
3. FINAL GRADE TO CONVEY SURFACE DRAINAGE TOWARD ROCK CHANNELS AND DISPERSION TRENCHES.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL AND STRIPPED OF TOPSOIL.
5. PLACE FILL SLOPES WITH A GRADIENT STEEPER THAN 3:1 IN LIFTS NOT TO EXCEED 8 INCHES, AND MAKE SURE EACH LIFT IS PROPERLY COMPACTED.

SOIL SUMMARY TABLE

	EXCAVATION	FILL	HAUL-AWAY
QTY.	200 CU YDS.	150 CU YDS.	50 CU YDS.

9

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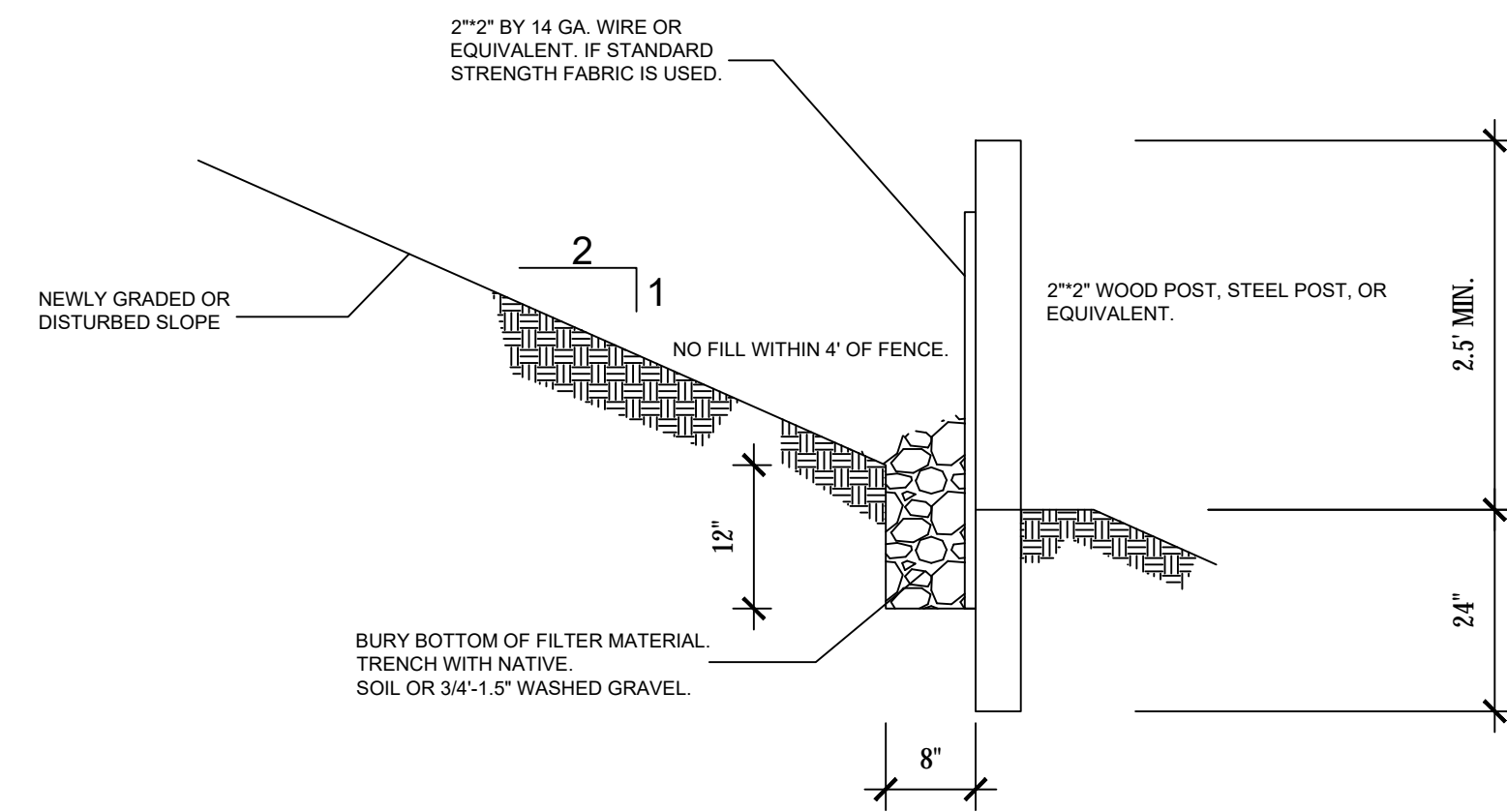
Project Name and Address:
PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date: SEP.04.2018
 Scale: 1/8"=1'-00"
 DRAWING TITLE: PROPOSED GRADING PLAN
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1	DESIGN REVIEW	07.26.18
2	FOR PERMIT	09.07.18

SITE FENCE DETAIL

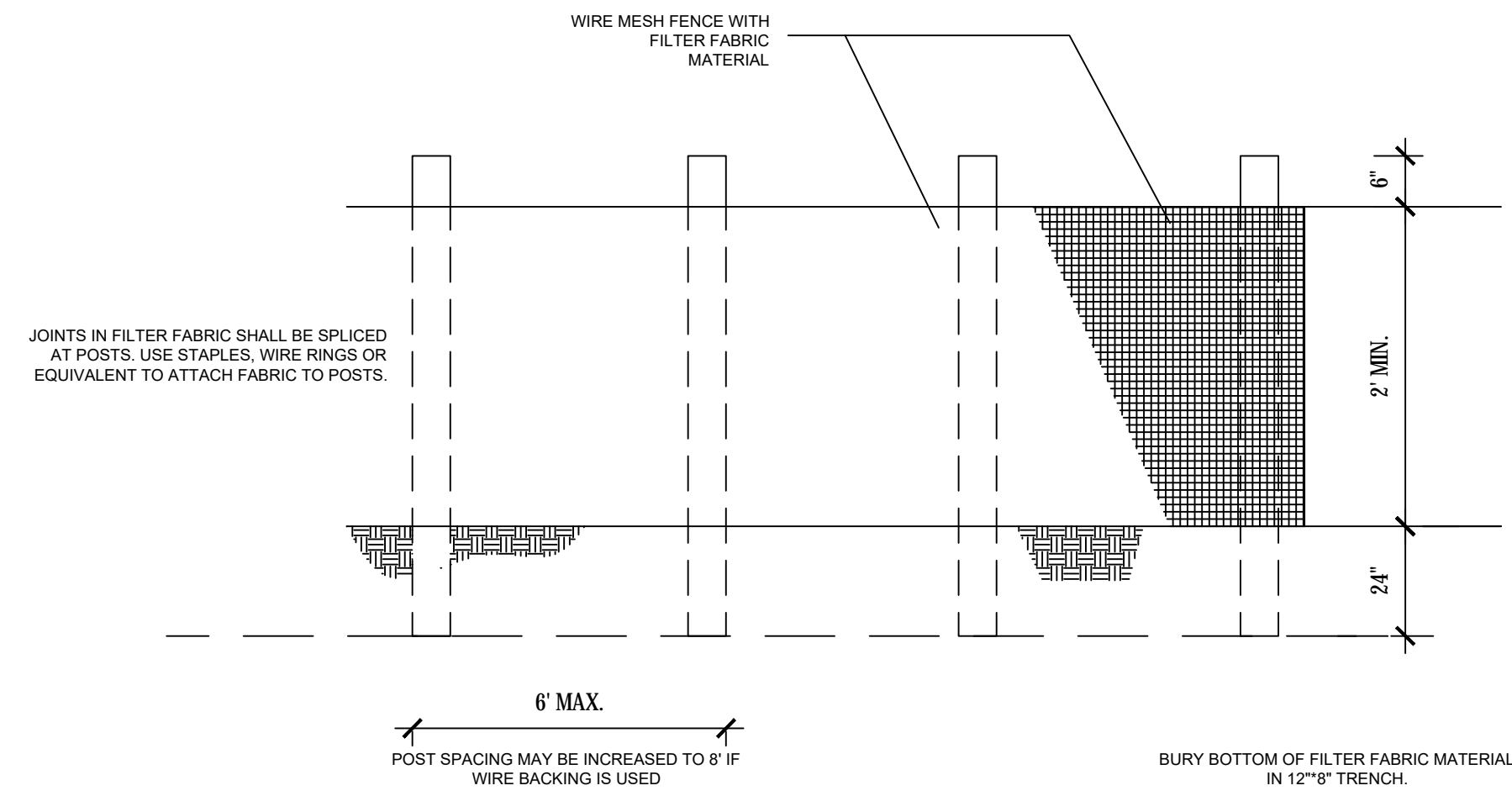


TYPICAL CROSS SECTION
NTS

TESC BMPS TO BE EMPLOYED AS NEEDED

NOTES:

- PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE CITY.
- PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
- PAD THICKNESS SHALL INCREASED IF SOIL CONDITIONS DICTATE OR PER DIRECTION OF THE CITY.
- MINIMUM DIMENSIONS MAY BE MODIFIED AS REQUIRED BY SITE CONDITIONS UPON APPROVAL OF THE CITY.

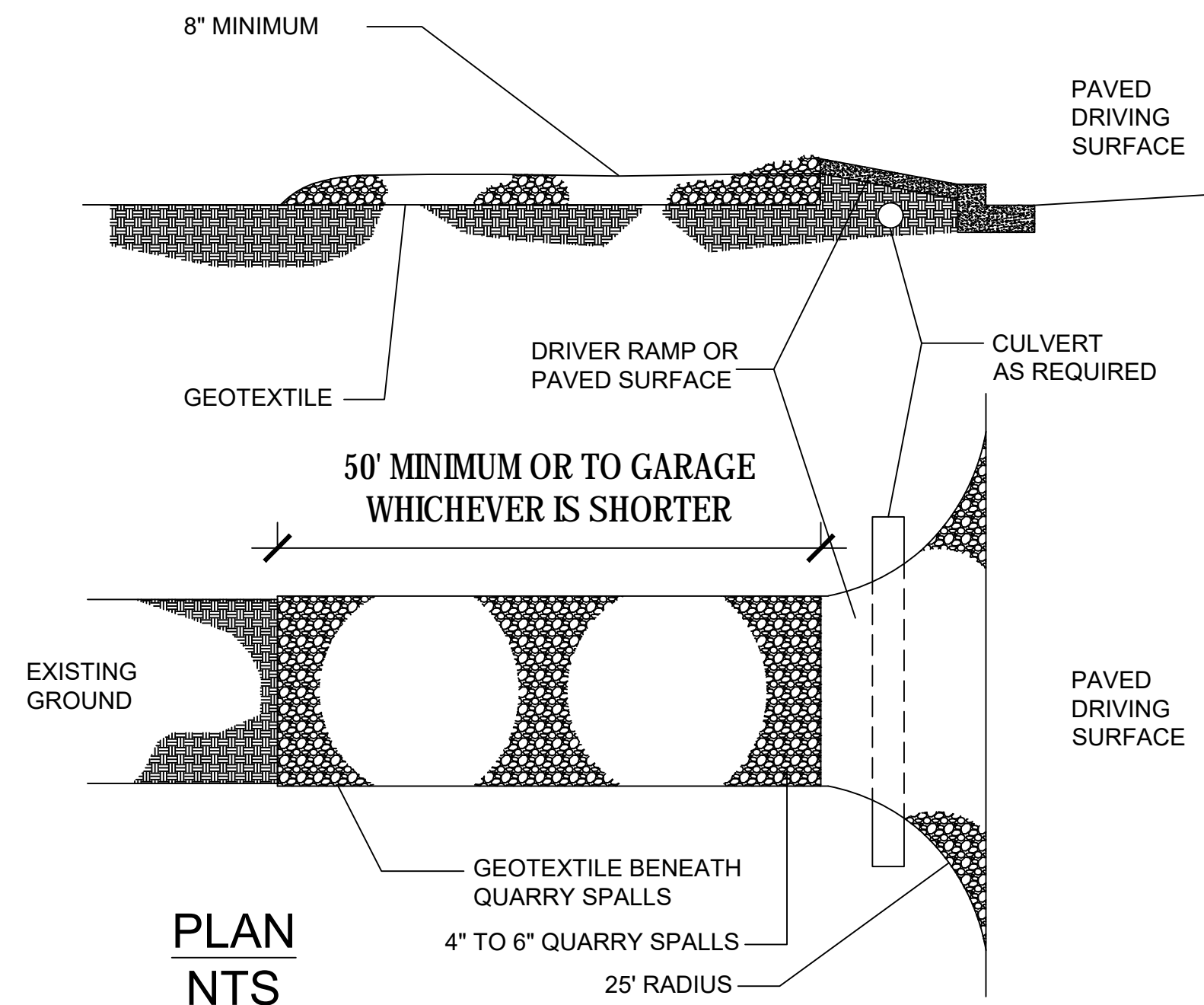


ELEVATION
NTS

NOTES:

- FENCE SHALL NOT BE INSTALLED ON SLOPES STEPPER THAN 2:1
- JOINTS IN FILTER FABRIC SHALL BE OVERLAPPED 6" AT POST.
- USE STAPLES, WIRE RINGS, OR EQUIVALENT TO ATTACH FABRIC TO WIRE FENCE.
- REMOVE SEDIMENT WHEN IT REACHES 1/2 FENCE HEIGHT.

TEMP. CONSTRUCTION ENTRANCE DETAIL



PLAN
NTS

STORMWATER MANAGEMENT, RUNOFF FROM PERMITTED IMPROVEMENTS SHALL ONLY ENTER A PUBLIC SPACE THROUGH AN APPROVED DRAINAGE CHANNEL OR NATURAL WATERCOURSE AS REQUIRED BY BMC 10.28.020 (1), AND SHALL NOT IMPACT NEIGHBORING PRIVATE PROPERTIES.

ADDRESS: 6173 VALLEY VIEW ROAD OAKLAND, CA 94010
 LOT SIZE: 12992.9 SQUARE FEET
 RH-3 HILLSIDE RESIDENTIAL - 3 ZONE.
 This Code: (Ord. No. 13172, § 3(Exh. A), 7-2-2013; Ord. No. 13064, § 2(Exh. A), 3-15-2011)

IMPERVIOUS SURFACE:

LIVING AREA = 1613.5 SQUARE FEET
 GARAGE = 400 SQUARE FEET
 BASEMENT: -
 COVERED FRONT PORCH = 246.6 SQUARE FEET
 DRIVEWAY/WALKS = 1040.9 SQUARE FEET
 CONCRETE TERRACE AREA: = 461.3 SF
 TOTAL: 3762.3 SQUARE FEET
 FAR = 0.45 MAXIMUM LOT COVERAGE (%) - ALLOWED 30%.
 PROPOSED LOT COVERAGE = 12992.9 / 3762.3 = 28.9%

Oakland, California, Planning Code *Table 17.13.04 Floor Area Ratio (FAR) and Lot Coverage*

GENERAL CONSTRUCTION STORM WATER POLLUTION PLAN (SWPPP)

PURPOSE

TO PREVENT THE DISCHARGE OF SEDIMENT AND OTHER POLLUTANTS TO THE MAXIMUM EXTENT THAT IS PRACTICAL FOR A SMALL CONSTRUCTION PROJECT.

DESIGN AND INSTALLATION

PLAN AND IMPLEMENT PROPER GRADING OF THE SITE. IT IS MOST IMPORTANT ONLY TO CLEAR THE AREAS NEEDED, KEEPING EXPOSED AREAS TO A MINIMUM. PHASE CLEANING SO THAT ONLY THOSE AREAS THAT ARE ACTIVELY BEING WORKED ARE UNCOVERED.

NOTE: CLEANING LIMITS SHALL BE FLAGGED ON THE LOT OR PROJECT AREA PRIOR TO INITIATING CLEARING.

FROM OCTOBER 1ST, THROUGH APRIL 30TH, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN TWO DAYS. FROM MAY 1ST, TO SEPTEMBER 30TH, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN SEVEN DAYS.

SOIL SHALL BE MANAGED IN A MANNER THAT DOES NOT PERMANENTLY COMPACT OR DETERIORATE THE FINAL SOIL AND LANDSCAPE SYSTEM. IF DISTURBANCE AND/OR COMPACTION OCCUR THE IMPACT MUST BE CORRECTED AT THE END OF THE CONSTRUCTION ACTIVITY. THIS SHALL INCLUDE RESTORATION OF SOIL DEPTH, SOIL QUALITY, PERMEABILITY, AND PERCENT ORGANIC MATTER. CONSTRUCTION PRACTICES MUST NOT CAUSE DAMAGE TO, OR COMPROMISE, THE DESIGN OF PERMANENT LANDSCAPE OR INFILTRATION AREAS.

LOCATE ANY SOIL PILES AWAY FROM DRAINAGE SYSTEMS. SOIL PILES SHOULD BE TRAPPED OR MULCHED UNTIL THE SOIL IS EITHER USED OR REMOVED. PILES SHOULD BE SITUATED SO THAT SEDIMENT DOES NOT RUN INTO THE STREET OR ADJOINING YARDS.

BACKFILL FOUNDATION WALLS AS SOON AS POSSIBLE AND ROUGH GRADE THE LOT. THIS ELIMINATES LARGE SOIL MOUNDS, WHICH, ARE HIGHLY ERODIBLE, AND PREPARES THE LOT FOR TEMPORARY COVER, WHICH WILL FURTHER REDUCE EROSION POTENTIAL.

REMOVE EXCESS SOIL FROM THE SITE AS SOON AS POSSIBLE AFTER BACKFILLING. THIS WILL ELIMINATE ANY SEDIMENT LOSS FROM SURPLUS FILL.

THE CONSTRUCTION ENTRANCE SHALL BE STABILIZED WHERE TRAFFIC WILL BE LEAVING THE CONSTRUCTION SITE AND TRAVELING ON PAVED ROADS OR OTHER PAVED SURFACES.

PROVIDE FOR PERIODIC STREET CLEANING TO REMOVE ANY SEDIMENT THAT MAY HAVE BEEN TRACKED OUT. SEDIMENT SHOULD BE REMOVED BY SHOVELING OR SWEEPING AND CAREFULLY REMOVED TO A SUITABLE DISPOSAL AREA WHERE IT WILL NOT BE RE-ERODED. STREET WASHING IS PROHIBITED WITHOUT SPECIAL PERMISSION FROM SSW UTILITY.



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MR AND MRS. EVANS
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date:
 SEP.04.2018

DRAWING TITLE:
 EROSION CONTROL PLAN

Sheet :

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SECTION 260500 - GENERAL PROVISIONS - ELECTRICAL GENERAL

- A. MAKE THE INSTALLATION IN ACCORDANCE WITH RECOGNIZED GOOD PRACTICES FOR THIS TYPE OF WORK. USE THE PROPER MATERIALS AND THE PROPER METHODS, WHETHER OR NOT THESE ARE DESCRIBED IN DETAIL HEREIN. PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE, OPERABLE INSTALLATION. CODES, PERMITS AND DRAWINGS
- A. CONFORM TO APPLICABLE CALIFORNIA ELECTRICAL CODE, APPLICABLE NATIONAL ELECTRIC SAFETY CODE, AND TO APPLICABLE LOCAL CODES. WHERE THE DRAWINGS AND SPECIFICATIONS EXCEED THE REQUIREMENT OF THE CODE, COMPLY WITH THE DRAWINGS AND SPECIFICATIONS.
- B. OBTAIN AND PAY ALL COSTS FOR REQUIRED PERMITS AND INSPECTIONS FOR ALL WORK INCLUDED HEREIN.
- C. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COMPLY WITH LISTED CODES, ORDINANCES, REGULATIONS AND STANDARDS. WHERE DISCREPANCIES OCCUR BETWEEN DRAWINGS, SPECIFICATIONS, CODE REQUIREMENTS AND ACTUAL FIELD CONDITIONS, NOTIFY THE ARCHITECT IMMEDIATELY AND ASK FOR AN INTERPRETATION. SHOULD INSTALLED MATERIALS OR WORKMANSHIP FAIL TO COMPLY, THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING THE IMPROPER INSTALLATION AT NO ADDITIONAL COST TO THE OWNER. MATERIALS
- A. WHERE THE UNDERWRITERS' LABORATORIES (UL) HAVE ESTABLISHED STANDARDS AND HAVE ISSUED LABELS FOR A PARTICULAR GROUP, CLASS OR TYPE OF MATERIAL, APPARATUS, APPLIANCE OR DEVICE, THE UL LABEL SHALL BE REQUIRED ON ALL SUCH ITEMS IN THAT CATEGORY INCORPORATED INTO THE WORK. SUBMITTALS
- A. SUBMIT FOR APPROVAL SHOP DRAWINGS ON THE FOLLOWING:
 - 1. WIRES AND CABLES
 - 2. RACEWAYS & BOXES
 - 3. WIRING DEVICES
 - 4. PANELBOARDS
 - 5. LIGHT FIXTURES TESTS
- A. ALL DEFECTIVE MATERIAL AND WORKMANSHIP DISCLOSED AS THE RESULT OF TESTS REQUIRED IN OTHER PORTIONS OF THESE SPECIFICATIONS SHALL BE CORRECTED AT CONTRACTOR'S EXPENSE. IT SHALL BE SHOWN, BY DEMONSTRATION IN SERVICE, THAT ALL CIRCUITS AND DEVICES ARE IN GOOD OPERATING CONDITION. EQUIPMENT CONNECTIONS
- A. POWER WIRING: MAKE WIRING CONNECTIONS TO ALL DEVICES AND EQUIPMENT BEING INSTALLED AS PART OF THE CONTRACT. RECORD DRAWINGS A. ON ONE (1) SET OF CONTRACT DRAWINGS, KEPT AT THE SITE DURING CONSTRUCTION, MARK ALL WORK THAT IS INSTALLED DIFFERENTLY FROM THAT SHOWN ON PLANS, INCLUDING REVISED CIRCUITRY, MATERIAL OR EQUIPMENT. SUFFICIENT DIMENSIONS SHALL BE PROVIDED TO LOCATE ALL MATERIALS INSTALLED BENEATH AND OUTSIDE THE BUILDING INCLUDING, BUT NOT LIMITED TO, UNDERGROUND CONDUITS, CABLING, GROUND RODS AND STUBOUTS.
- B. ALL CHANGES OR REVISIONS TO THE CONTRACT DRAWINGS INCLUDING, BUT NOT LIMITED TO, THOSE INDICATED BY AMENDMENT, CHANGE ORDER, FIELD ORDER, WRITTEN RESPONSE TO RFI OR OTHER CONTRACTUAL MEANS SHALL BE KEPT CURRENT AS THE WORK PROGRESSES AND SHALL BE INCORPORATED ONTO THE FINAL RECORD DRAWINGS.
- C. ACCURATELY LOCATE AND DIMENSION ALL UNDERGROUND AND EMBEDDED CONDUIT RUNS ON THE RECORD DRAWINGS.
- D. THE MARKED DRAWINGS SHALL BE KEPT CURRENT AS THE WORK PROGRESSES AND SHALL BE AVAILABLE FOR INSPECTION UPON REQUEST. AT THE CLOSE OF CONSTRUCTION, PREPARE A SET OF ACCURATE REPRODUCIBLE RECORD DRAWINGS AND TURN THEM OVER TO THE ARCHITECT. THE CORRECT AND COMPLETED RECORD DRAWINGS ARE A PREREQUISITE TO FINAL CONSTRUCTION PAYMENT.
- 1. AS PART OF THE REPRODUCIBLE RECORD DRAWINGS, THE CONTRACTOR SHALL PRODUCE FULL SIZE REPRODUCIBLE DRAWINGS WITH THE FINAL PANELBOARD SCHEDULES AS MODIFIED DURING CONSTRUCTION AND FINAL LIGHT FIXTURE SCHEDULE AS MODIFIED DURING CONSTRUCTION.
- 2. THESE DRAWINGS SHALL BE ON ARCHITECTURAL BASE SHEETS AND NUMERICALLY SEQUENCED FOLLOW THE LAST "E" SHEET. SECTION 260533 - RACEWAYS GENERAL
- A. MINIMUM SIZES: MINIMUM SIZE FOR ABOVE GROUND RACEWAYS SHALL BE 3/4". USE 1" CONDUIT FOR BELOW GRADE INSTALLATIONS. PRODUCTS
- A. RACEWAYS.
 - 1. ELECTRIC METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL AS MANUFACTURED BY TRIANGLE OR AN APPROVED EQUAL.
- B. FITTINGS.
 - 1. INDOORS ON EMT: COMPRESSION TYPE
- C. PROVIDE ALL CONNECTORS, TEES, ELBOWS, ETC. REQUIRED TO ENSURE A RIGID COMPLETE INSTALLATION. INSTALLATION
 - 1. INSIDE BUILDING UNDER CANOPY.
 - D. RGC RIGID CONDUIT WITH COMPRESSION FITTINGS.
 - E. EXPOSED CONDUIT SHALL BE RUN STRAIGHT LINES PARALLEL TO BUILDING CONSTRUCTION.
 - 2. EXTERIOR LOCATIONS BELOW CHEETAH BUILDING CANOPY UP TO 8 FT ABOVE FINISHED FLOOR
 - A. INSTALL RGC RIGID CONDUIT WITH COMPRESSION FITTINGS.
 - 3. UNDERGROUND LOCATIONS.
 - A. INSTALL PVC SCHEDULE 40 CONDUIT WITH SCHEDULE 80 ELBOWS.

G. SUPPORT:

- 1. FURNISH AND INSTALL COMPLETE, ADEQUATE AND STURDY SUPPORTS FOR ALL PARTS OF THE RACEWAY SYSTEM.
- 2. ALL CONDUITS MUST BE SUPPORTED WITH MATERIALS SPECIFICALLY MADE FOR THIS PURPOSE. DO NOT USE WIRE HANGERS. USE MALLEABLE IRON CONDUIT CLAMPS, TRAPEZE SUPPORTS OR CADDY FASTENERS. MULTIPLE RUNS SHALL BE SUPPORTED BY "UNISTRUT" OR EQUIVALENT MULTIPLE HANGERS. EACH CONDUIT SHALL BE CLAMPED AT EACH "UNISTRUT" SUPPORT.
- H. CONTINUITY: MAKE ALL JOINTS AND CONNECTIONS IN A MANNER, WHICH WILL ENSURE MECHANICAL STRENGTH AND ELECTRICAL CONTINUITY.
- I. OPENINGS: KEEP ALL RACEWAY OPENINGS CLOSED IN A MANNER TO PREVENT ENTRY OF MOISTURE AND FOREIGN MATERIALS UNTIL CONDUCTORS ARE INSTALLED. BLOW AND SWAB OUT ALL RACEWAYS BEFORE PULLING IN CONDUCTORS. IN EACH RACEWAY PULL ALL CONDUCTORS SIMULTANEOUSLY. SECTION 260519 - WIRES AND CABLES GENERAL
- A. PROVIDE A COMPLETE SYSTEM OF INSULATED CONDUCTORS FOR ALL POWER REQUIREMENTS AND FOR ALL OTHER SYSTEMS WHERE THE CONDUCTORS ARE NOT INCLUDED UNDER THAT SYSTEM'S SECTION, TESTED AND CONNECTED AT BOTH ENDS. MATERIALS
- A. CONDUCTOR MATERIALS - 600 VOLT:
 - 1. SOFT DRAWN ANNEALED COPPER, NINETY-EIGHT (98%) PERCENT CONDUCTIVITY, CONTINUOUS FROM DEVICE TO DEVICE, WITHOUT WELDS, SPLICES OR JOINTS. MINIMUM WIRE SIZE NO. 12. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE THE MINIMUM COPPER AWG CONDUCTOR SIZES REQUIRED.
- B. CONDUCTOR INSULATION - 600 VOLTS:
 - 1. ALL WIRE SHALL BE INSULATED FOR 600 VOLTS.
 - 2. CONTROL WIRING: THW, THWN OR THHN, STRANDED.
 - 3. POWER WIRING: THHN/THWN STRANDED.
 - 4. ALL INSULATION IN AWG SIZES TEN (10) AND BELOW SHALL BE IMPREGNATED WITH COLOR ACCORDING TO THE FOLLOWING: 120/208 VOLTS PHASE "A" BLACK PHASE "B" RED PHASE "C" BLUE NEUTRAL WHITE (STRIPED TO INDICATE PHASE) GROUND GREEN COLOR (OTHER THAN BLACK) IS NOT AN INTEGRAL PART OF INSULATION, USE 3M NO. 35 TAPES IN THE SAME COLOR CODE TO IDENTIFY BOTH ENDS OF CONDUCTORS. GROUND CONDUCTOR MUST HAVE GREEN INSULATION; GREEN TAPES ON OTHER COLORS OF INSULATION ARE NOT ACCEPTABLE.
- 5. MANUFACTURERS: ANACONDA, COLLYER, GENERAL ELECTRIC, OKONITE, PHELPS DODGE, ROME, TRIANGLE, OR APPROVED EQUAL. INSTALLATION
- A. WIRE - 600 VOLT:
 - 1. DO NOT PULL ANY CONDUCTORS INTO CONDUITS UNTIL ALL WORK OF A NATURE WHICH MAY CAUSE INJURY TO CONDUCTORS IS COMPLETED. NO WIRE OR CABLE SHALL BE PULLED INTO CONDUIT THAT TERMINATES IN MAJOR EQUIPMENT, UNTIL SUCH EQUIPMENT HAS BEEN INSTALLED AND PERMANENTLY ANCHORED IN PLACE. BLOW OUT AND SWAB CONDUITS BEFORE INSTALLING CONDUCTORS.
 - 2. FEEDERS SHALL BE RUN THEIR ENTIRE LENGTH AS CONTINUOUS CONDUCTORS WITHOUT JOINTS OR SPLICES; HOWEVER, JOINTS AND SPLICES IN BRANCH CIRCUITS SHALL BE PERMITTED WHERE CIRCUITS DIVIDE (IN JUNCTION BOXES ONLY).
 - 3. CARE SHALL BE EXERCISED WHEN INSTALLING WIRE IN CONDUIT SO AS NOT TO DAMAGE THE CONDUCTOR INSTALLATION. MECHANICAL MEANS OF PULLING SHALL NOT BE USED UNLESS APPROVED. OILS, GREASE OR ANY OTHER INJURIOUS TYPE OF PULLING COMPOUND SHALL NOT BE USED WHEN PULLING IN CONDUCTORS. "Y-ER-EASE" COMPOUND OR APPROVED EQUAL WILL BE ACCEPTABLE.
- 5. IN EQUIPMENT AND PANELS, BUNCH, FORM AND SECURE WIRE WITH BURNDY TYRAPS OR APPROVED EQUAL, AT INTERVALS APPROPRIATE TO THE BUNDLE SIZE.
- 6. THE USE OF JUNCTION BOXES TO GATHER SEVERAL HOMERUNS INTO A LARGER CONDUIT TO A PANELBOARD WILL NOT BE PERMITTED.
- 7. LEAVE ADEQUATE SPACE IN PANELBOARDS AND CABINETS FOR FUTURE CIRCUITS AND FOR WIRING INSTALLED BY OTHERS.
- 8. ALL RACEWAYS SHALL INCLUDE A CODE SIZED INSULATED GROUNDING CONDUCTOR.
- 9. ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE INDIVIDUAL NEUTRAL CONDUCTORS.
- B. SPLICES:
 - 1. SPLICES IN 600 VOLT-FEEDER WIRES WILL NOT BE PERMITTED.
- C. TESTS:
 - 1. WIRING SYSTEMS SHALL BE TESTED FOR INSULATION RESISTANCE AFTER ALL WIRING IS COMPLETED AND CONNECTED READY FOR THE ATTACHMENT OF EQUIPMENT AND AGAIN WHEN EQUIPMENT IS CONNECTED READY FOR USE.
 - 2. TESTS SHALL BE MADE WITH AN INSTRUMENT (MEGGER) CAPABLE OF MEASURING THE CORRECT INSULATION RESISTANCE AND HAVING A MINIMUM VOLTAGE RATING OF 500 VOLTS. READINGS TAKEN AFTER THE VOLTAGE HAS BEEN APPLIED SHALL VERIFY THAT THE INSULATION RESISTANCE BETWEEN CONDUCTORS AND ALSO BETWEEN EACH CONDUCTOR AND GROUND IS IN EXCESS OF 10M-OHMS.
 - 3. IN CASE OF FAILURE DURING THE MEGGER TEST, LOCATE AND REPLACE THE FAULTY TERMINATION OR CABLE SECTION AS NECESSARY, AND REPEAT THE INSULATION TEST AT NO ADDITIONAL COSTS TO THE OWNER.
 - 4. ADEQUATE MEANS SHALL BE TAKEN TO ENSURE SAFETY DURING THE TESTS AND ALL SAFETY INSTRUCTIONS OF THE TEST OPERATOR SHALL BE OBSERVED.

ELECTRICAL / GENERAL NOTES

PROVIDE A 125 VOLT 15 OR 20 AMP RECEPTACLE WITHIN 25" OF HEATING OR AIR CONDITIONING EQUIPMENT.
210.63 CEC 2010
TWO SMALL APPLIANCE BRANCH CIRCUITS ARE REQUIRED FOR THE KITCHEN AND LIMITED TO SUPPLYING WALL AND COUNTER SPACE OUTLETS FOR THE KITCHEN, PANTRY, BREAKFAST ROOM, DINING ROOM, OR SIMILAR AREAS. NOTE: THESE CIRCUITS CANNOT SERVE OUTSIDE PLUGS, RANGE HOOD, DISPOSALS, DISHWASHERS OR MICROWAVES - ONLY THE REQUIRED COUNTERTOP/WALL OUTLETS INCLUDING THE REFRIGERATOR. CEC 210.11(C)(1) & 210.52(B)
A DEDICATED MINIMUM 20-AMP CIRCUIT IS REQUIRED TO SERVE THE REQUIRED BATHROOM OUTLETS. THIS CIRCUIT CANNOT SUPPLY ANY OTHER RECEPTACLES, LIGHTS, FANS, ETC. (EXCEPTION-WHERE THE CIRCUIT SUPPLIES A SINGLE BATHROOM, OUTLETS FOR OTHER EQUIPMENT WITHIN THE SAME BATHROOM SHALL BE PERMITTED TO BE SUPPLIED.) CEC 210.11(C)(3) AND 210.52(D)
A MINIMUM 20 AMP SMALL APPLIANCE BRANCH CIRCUITS SHALL BE PROVIDED FOR ALL RECEPTACLE OUTLETS IN THE KITCHEN, DINING AREA, PANTRY, OR OTHER SIMILAR AREAS (CEC 210.11(C)(1)) AT LEAST ONE 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY LAUNDRY RECEPTACLE OUTLETS. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. (CEC 210.11(C)(2))
IN EVERY DWELLING UNITE, FIXED APPLIANCES SUCH AS FOOD WASTE GRINDERS, DISHWASHERS, WASHING MACHINES, DRYERS, LAUNDRY TRAY LOCATIONS BUILT-IN REFRIGERATORS OR FREEZERS, FURNACES, AC UNITS, BUILT-IN HEATERS OR ANY OTHER FIXED APPLIANCE WITH A MOTOR OF M- < H.P. OR LARGER SHALL BE ON A SEPARATE 20 AMP. BRANCH CIRCUIT.
125- AND 250-VOLT RECEPTACLES INSTALLED OUTDOORS IN A WET LOCATION SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. (CEC 406.8 (B)(1)).
TAMPER RESISTANT RECEPTACLES AT ALL 124 VOLT, 15 AND 20 AMP RECEPTACLES. CEC 406.11
AFCI PROTECTED RECEPTACLES IN FAMILY ROOM, DINING ROOM, LIVING ROOM, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATING ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS PER CEC 210.12(B)
SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING, INTERCONNECTED, AND WIRED ON A LIGHTING CIRCUIT WITH BATTERY BACKUP. EXISTING AREAS MAY BE SOLELY BATTERY OPERATED. SMOKE ALARMS SHALL NOT BE INSTALLED WITHIN A 36" HORIZONTAL PATH FROM THE SUPPLY OR RETURN REGISTERS OF A HEATING OR COOLING SYSTEM. R314 CRC/2010 CARBON MONOXIDE ALARMS: SAME REQUIREMENTS AS SMOKE ALARMS EXCEPT NOT REQUIRED IN BEDROOMS. R315 CRC/2010
APPLIANCES DESIGNER TO BE FIXED IN POSITION SHALL BE SECURELY FASTEN IN PLACE. SUPPORTS FOR APPLIANCES SHALL BE DESIGNED AND CONSTRUCTED TO SUSTAIN VERTICAL AND HORIZONTAL LOADS WITHIN THE STRESS LIMITATIONS SPECIFIED IN THE BUILDING CODE. 303.4 CMC / 2010 (SEISMIC BRACING FOR GAS APPLIANCES.)
APPLIANCES INSTALLED IN GARAGES OR OTHER AREAS SUBJECT TO MECHANICAL DAMAGE SHALL BE GUARDED AGAINST BY BEING INSTALLED BEHIND PROTECTIVE BARRIERS OR ELEVATED OR OUT OF THE NORMAL PATH OF VEHICLES. INSTALL A 4" DIAMETER BOLLARD (FILLED W/ CONCRETE) EMBEDDED 36" INTO 12" DIAMETER FOOTING IN FRONT OF APPLIANCE OR PROVIDE A DETAIL AND OR CALCULATION FROM AN ENGINEER FOR REVIEW
604.1 CMC / 2010
APPLIANCES DESIGNER TO BE FIXED IN POSITION SHALL BE SECURELY FASTEN IN PLACE. SUPPORTS FOR APPLIANCES SHALL BE DESIGNED AND CONSTRUCTED TO SUSTAIN VERTICAL AND HORIZONTAL LOADS WITHIN THE STRESS LIMITATIONS SPECIFIED IN THE BUILDING CODE. 303.4 CMC / 2010 (SEISMIC BRACING FOR GAS APPLIANCES.)

UFER GROUND NOTE :
ALL SIEEL REBARS MEASURING 1/2" OR MORE IN DIAMETER AND 20' OR LONGER IN LENGTH THAT IS ENCASED IN NOT LESS THAN 2 INCHES OF CONCRETE SHALL BE BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH CEC 250 (ELECTRICAL SUBCODE) SECTION 250.52(A)(3). THE "UFER" GROUND CAN BE 20 L.F. OF #2 OR #4 COPPER WIRING LAID INSIDE THE FOOTING AND THE SAME WIRE IS LONG ENOUGH TO REACH TO THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE. UFER GROUND CAN BE (1) L-SHAPED PIECE OF #4 STEEL REBAR CONNECTED TO THE OTHER STEEL REBAR IN THE FOOTING AND STICKING OUT IN SUFFICIENT LENGTH FOR CONNECTION AT THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE

NOTE SWITCHES, CONTROLLER, THERMOSTAT...ETC MOUNTING HEIGHT @ MINIMUM 15" TO MAXIMUM 48"

Project Name and Address:

PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date:
SEP. 04, 2018
Scale:

DRAWING TITLE:
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NOTE: THE MENTIONED WIRE GAUGE HERE ARE THE MINIMUM ALLOWED SIZE

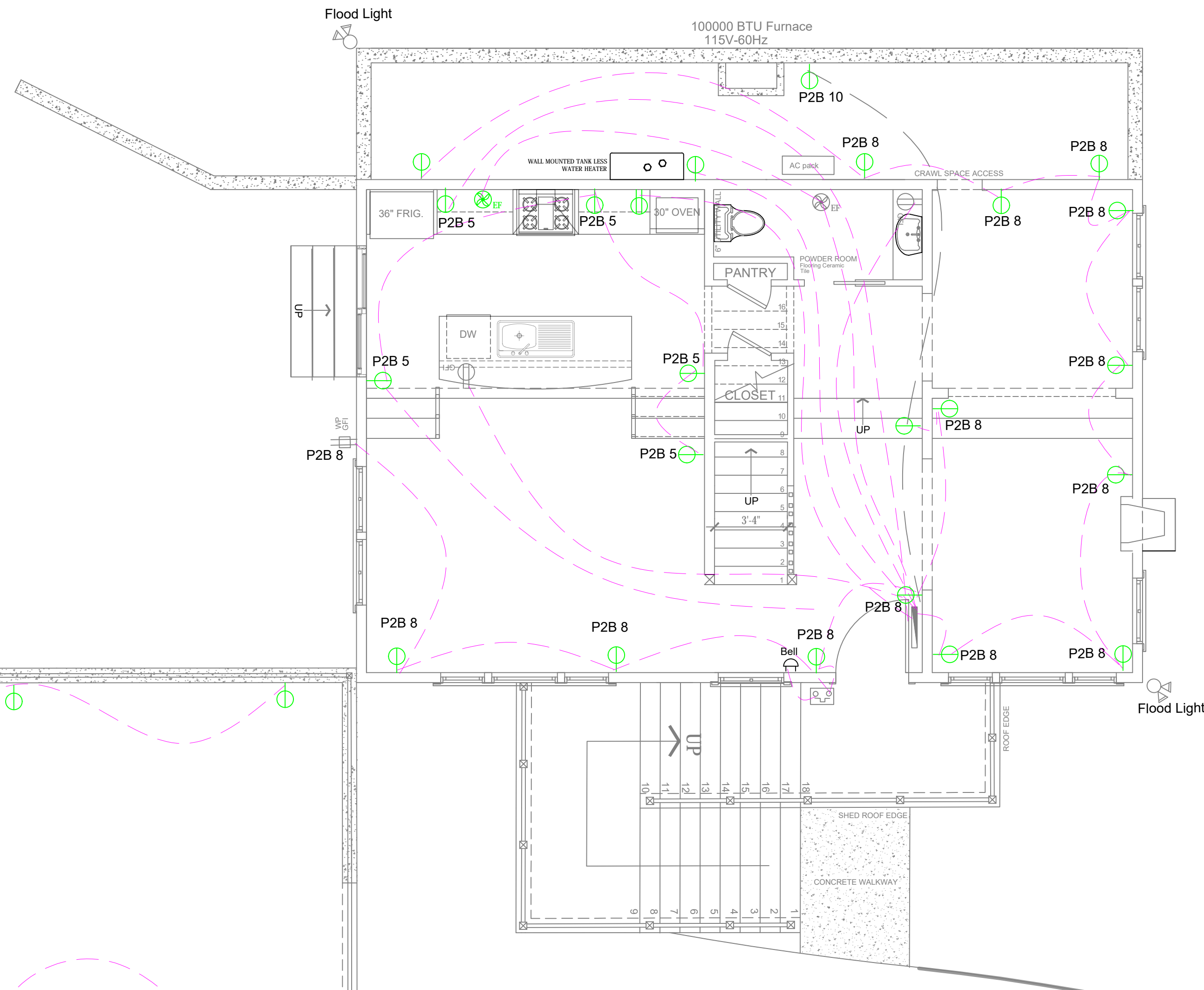
#5 125V outlets Kitchen small applications	#3 AWG12	P2B 5	P2B 5	
#9 125V outlets	#3 AWG16	P2B 8	P2B 8 S/A	
#6 125V outlets + #1 waterproof 110V outlet + Bell circuit	#3 AWG16	P2B 8		
#2 Electrical Fan	#3 AWG20	P2B 11		
#1 125V outlets	#3 AWG16	P2B 6	P2B 6 Refrigerator	
#1 125V GFI outlets	#3 AWG20	P2B 07	P2B 7 Bath GFI	
#1 two poles 125V outlets	#4 AWG10	P2B1&3	P2B 1&3 El. Oven	
#1 125V outlets	#3 AWG12	P2B 10	P2B 10 Furnace	

NOTE: THE MENTIONED WIRE GAUGE HERE ARE THE MINIMUM ALLOWED SIZE

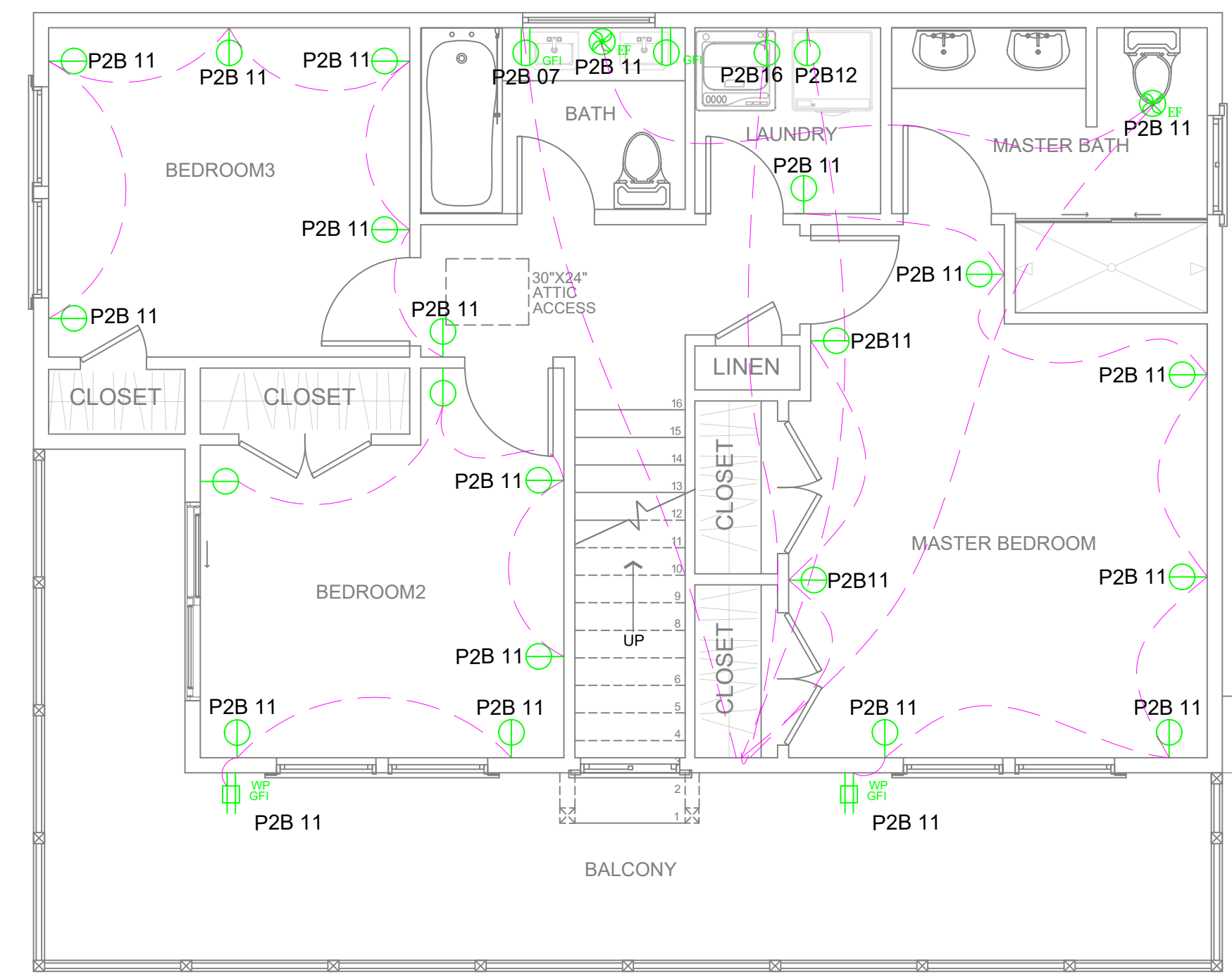
#9 125V outlets + #1 waterproof 110V outlet	#3 AWG16	P2B 11	P2B 11 S/A	
#9 125V outlets + #1 waterproof 110V outlet	#3 AWG16	P2B 11		
#2 125V outlets	#3 AWG16	P2B 11		
#2 Electrical Fan	#3 AWG20	P2B 11		
#1 125V outlets	#3 AWG16	P2B16	P2B 16 Dryer	
#4 125V GFI outlets	#3 AWG20	P2B 07	P2B 7 Bath GFI	
#1 125V outlets	#3 AWG16	P2B12	P2B 12 Laundry	

DIRECTORIES OF ELECTRICAL CONSTRUCTION MATERIALS PUBLISHED BY QUALIFIED TESTING LABORATORIES CONTAIN LISTING AND INSTALLATION RESTRICTIONS NECESSARY TO MAINTAIN THE FIRE-RESISTIVE RATING OF ASSEMBLIES [770.26 NOTE]. OUTLET BOXES MUST HAVE A HORIZONTAL SEPARATION AT LEAST 24 IN. WHEN INSTALLED IN A FIRE-RATED ASSEMBLY, UNLESS AN OUTLET BOX IS LISTED FOR CLOSER SPACING OR PROTECTED BY FIRE-RESISTANT "PUTTY PADS" PER PUTTY PADS" PER PER MANUFACTURER'S INSTRUCTIONS.S INSTRUCTIONS.

Conductor Size					Current Rating
AWG	C.M.A.	Diameter (mm)	mm ²	Size	
#32	63	0.20	0.03	•	0.3A
#30	101	0.26	0.05	•	0.5A
#28	160	0.32	0.08	•	0.7A
#26	254	0.41	0.13	•	1.0A
#24	404	0.51	0.20	•	2.0A
#22	643	0.64	0.33	•	3.0A
#20	1,020	0.81	0.52	•	5.0A
#18	1,624	1.02	0.82	•	7.0A
#16	2,583	1.29	1.31	•	10.0A
#14	4,106	1.63	2.08	•	20.0A
#12	6,530	2.05	3.31	•	30.0A
#10	10,384	2.59	5.26	•	50.0A



13 PROPOSED 1ST FLOOR ELECTRICAL PLAN Scale: 1/4" = 1' - 00"



14 PROPOSED 2ND FLOOR ELECTRICAL PLAN Scale: 1/4" = 1' - 00"

FNAME

REVDATE

Flood Light

Main board & Meter

Gate Motor

Pumps

Flood Light

UP

UP

UP

UP

UP

UP

UP

UP

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Project Name and Address:

PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
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Date: SEP. 04, 2018
 Scale: 1/4" = 1'-00"

DRAWING TITLE:
 PROPOSED 1ST AND 2ND FLOOR ELECTRICAL PLANS

Sheet :

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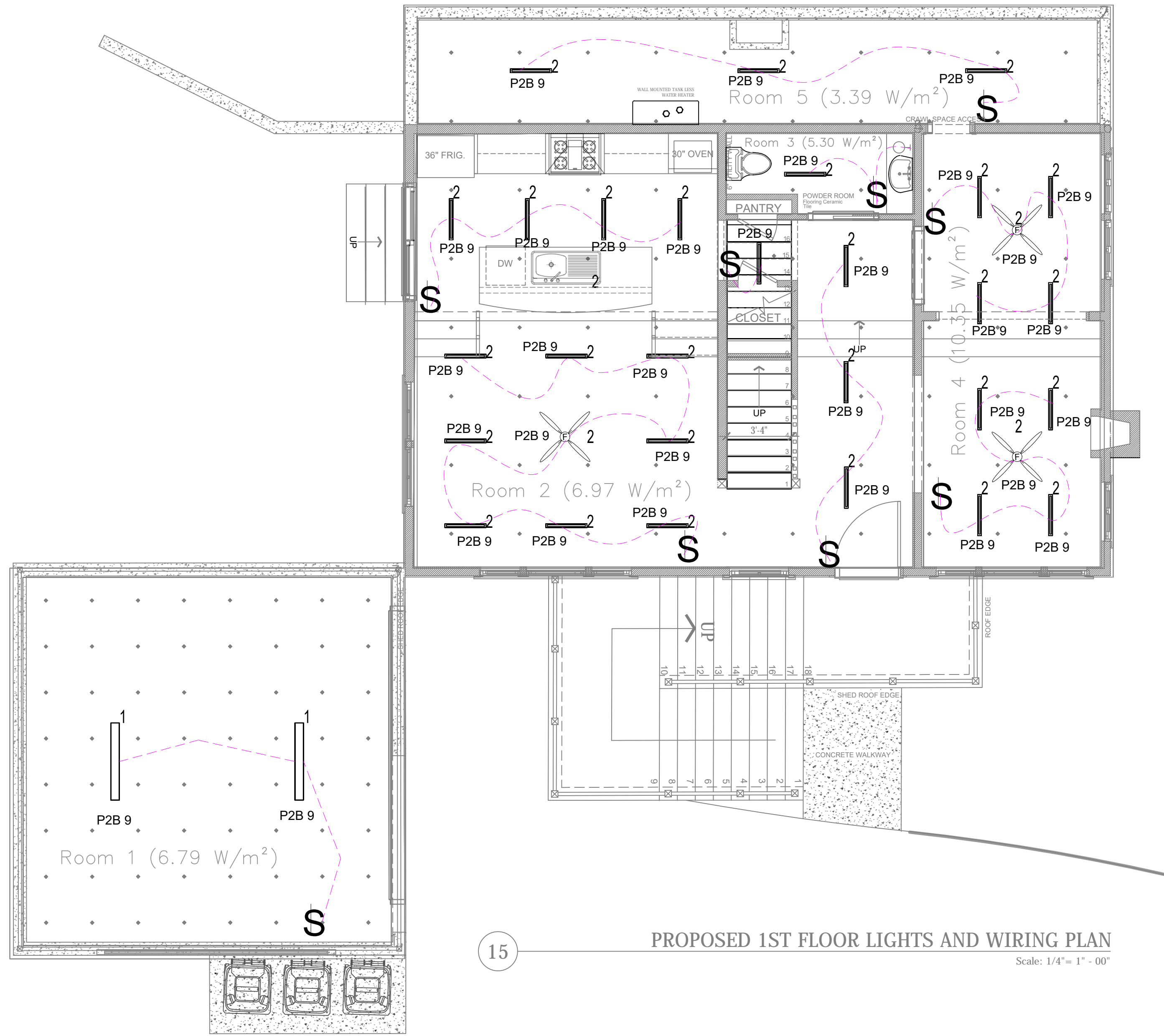
E101

No.	Revision/Issue	Date
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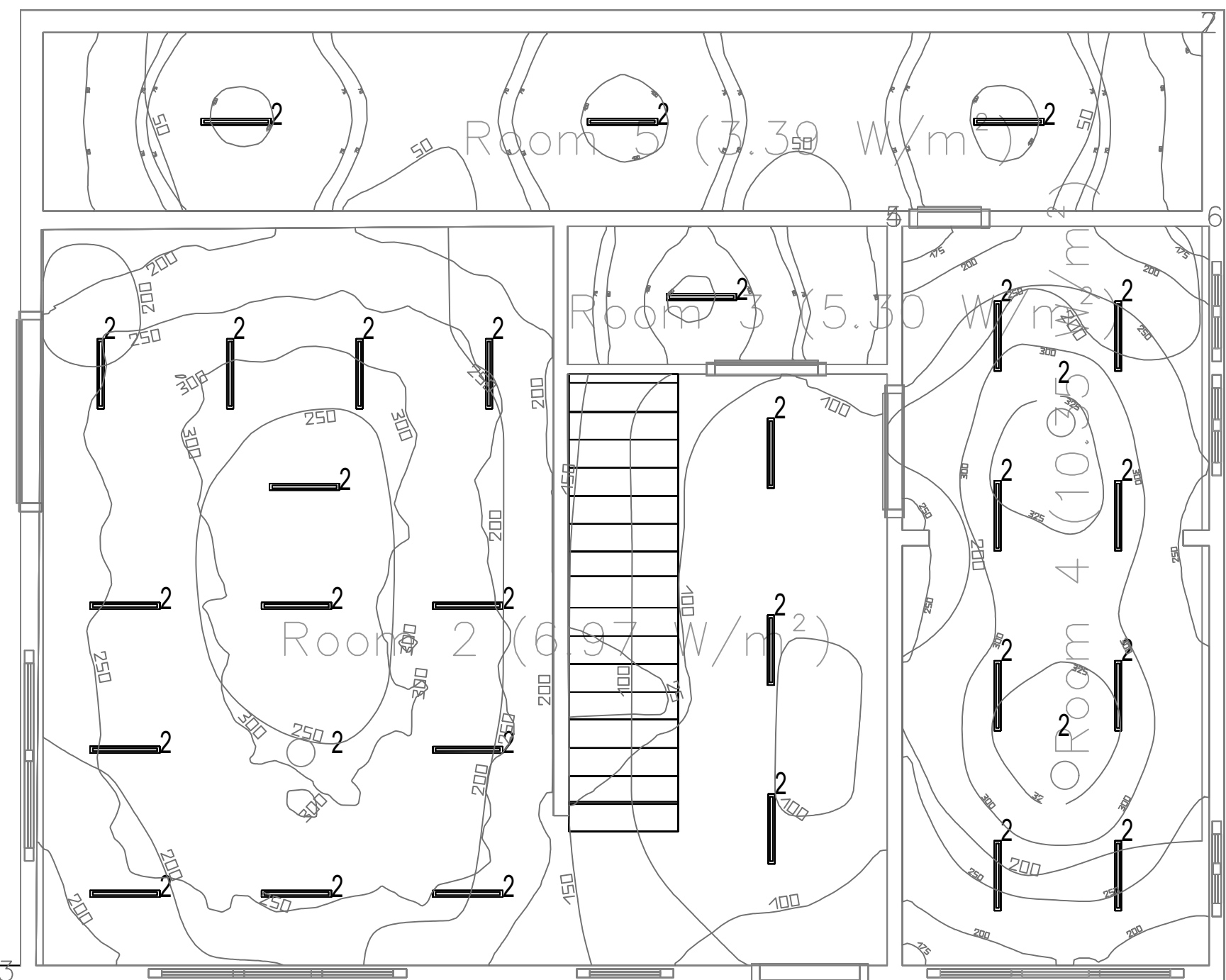
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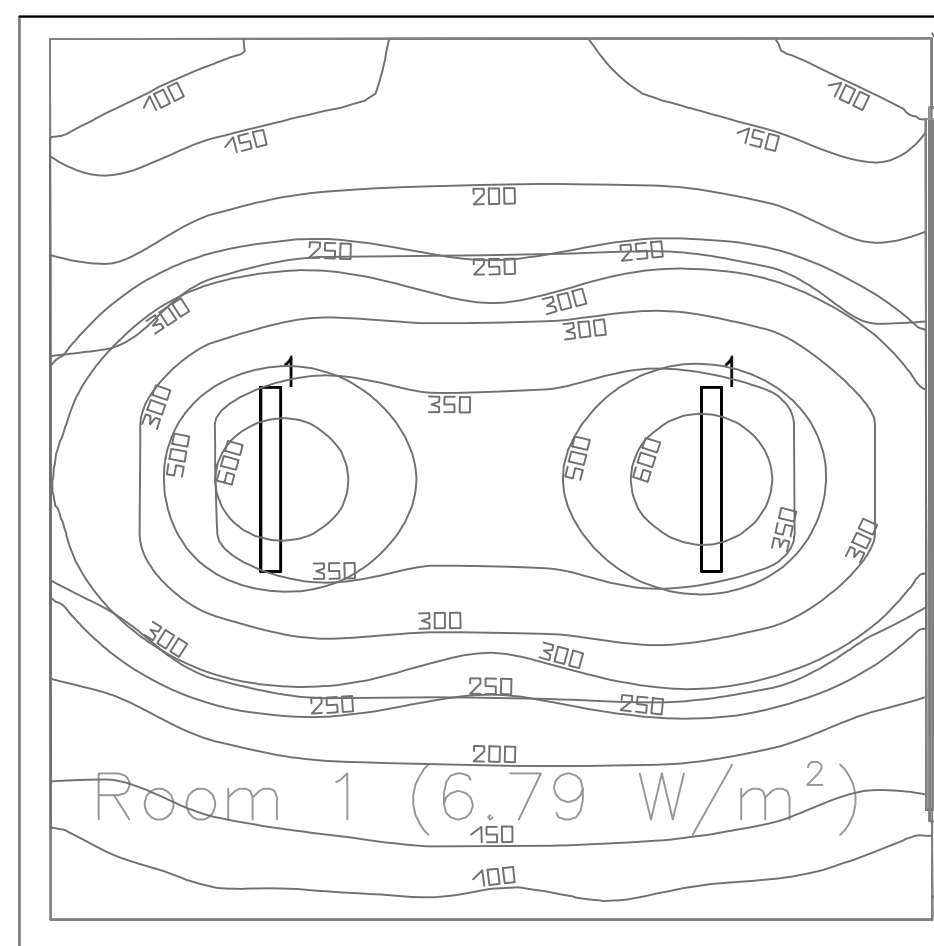




15 PROPOSED 1ST FLOOR LIGHTS AND WIRING PLAN
Scale: 1/4" = 1' - 00"



16 1ST FLOOR PHOTOMETRIC STUDIES
NTS



ISOLINE FOR PHOTOMETRIC STUDIES

LUMINARIES PARTS LIST								
INDEX	MANUFACTURER	LUMINARIES TYPE	ITEM NUMBER	FITTING	LUMINOUS FLUX	LIGHT LOSS FACTOR	CONNECTED LOAD	QUANTITY
1	PETRIDIS	ARETE 2x20W T16 RW	131373-103209	2xLED lamp tube - shaped T 16	8900 lm	0.80	45W	2
2	PETRIDIS	ARETE 1x18W T26	131013	1xfluorescent lamp tube - shaped T 16	1350 lm	0.80	19.6 W	31

ALL LIGHT WIRING ARE AWG18

#	NAME	PARAMETER	MIN	MAX	AVERAGE	MEAN/MIN	MAX/MIN
1	CALCULATION SURFACE 1	PERPENDICULAR ILLUMINANCE	116 lx	378 lx	239 lx	2.06	3.26
2	CALCULATION SURFACE 4	PERPENDICULAR ILLUMINANCE	38.7 lx	259 lx	151 lx	3.90	6.69
3	WORKPLANE 1	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	73.5 lx	658 lx	281 lx	3.82	8.95
4	WORKPLANE 2	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	4.31 lx	340 lx	209 lx	48.49	78.89
5	WORKPLANE 3	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	48.0 lx	113 lx	83.1 lx	1.73	2.35
6	WORKPLANE 4	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	161 lx	349 lx	272 lx	1.69	2.17
7	WORKPLANE 5	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	37.8 lx	107 lx	73.8 lx	1.95	2.83

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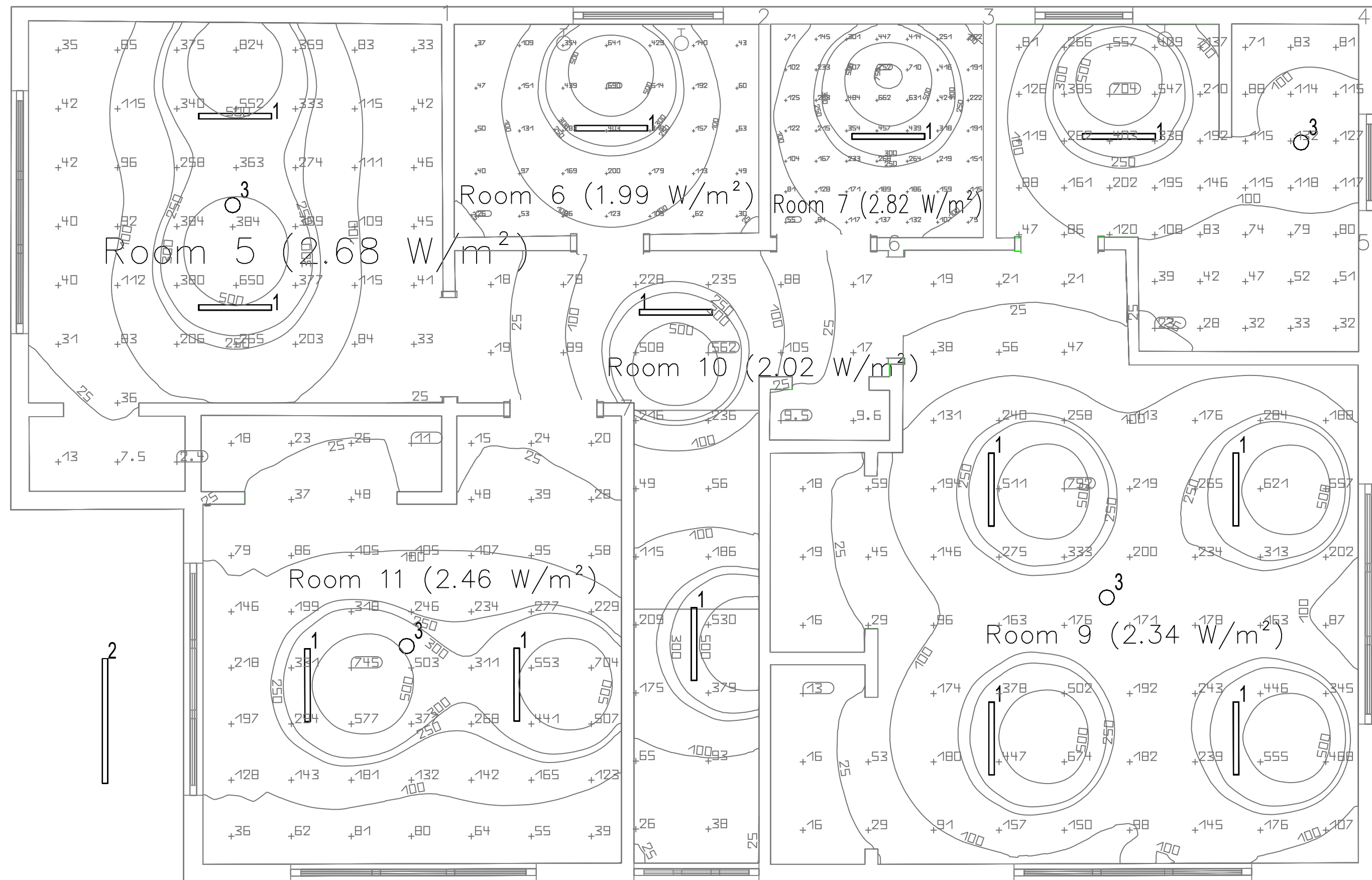
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1ST FLOOR LIGHTING PLAN

Sheet :

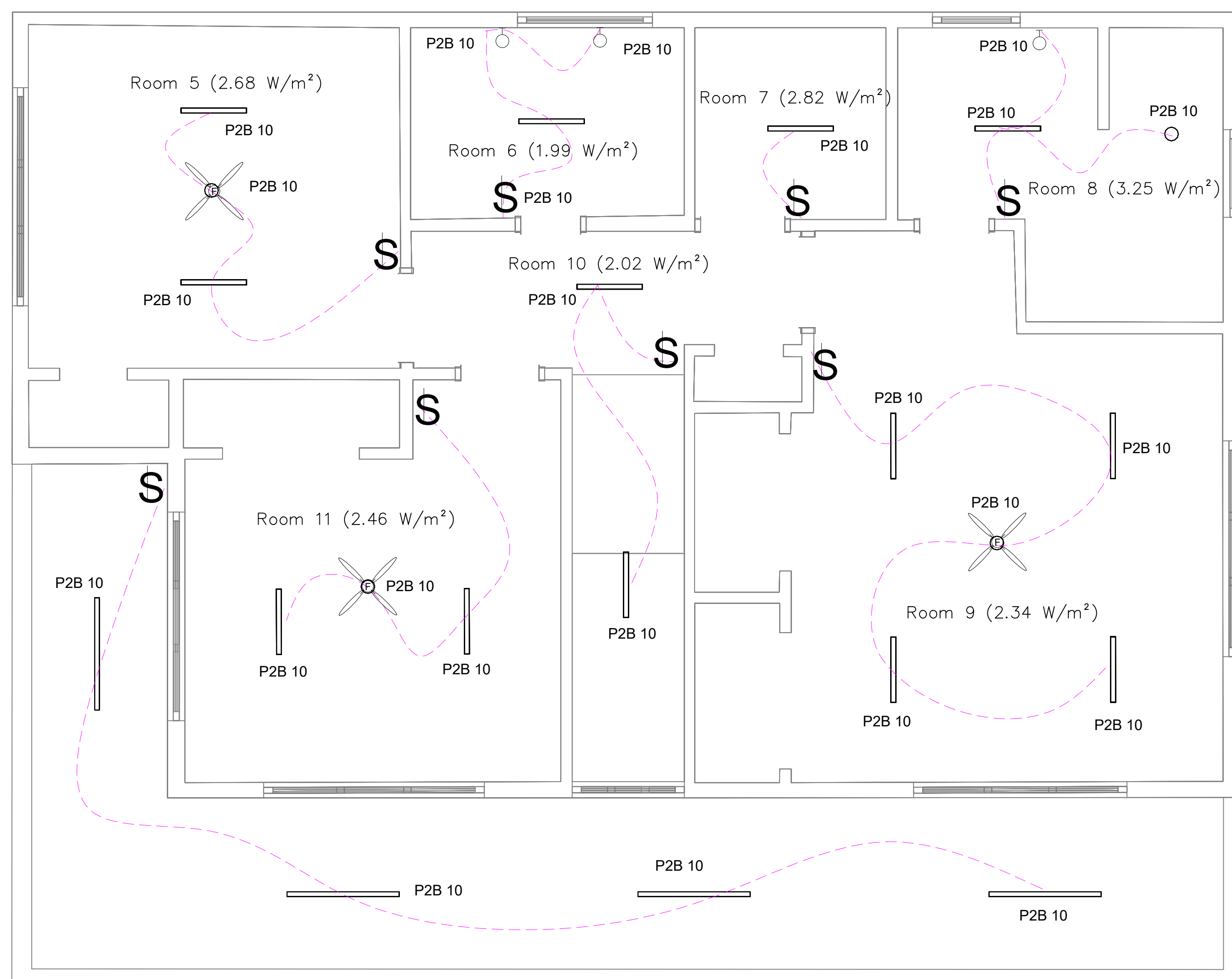
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No.	Revision/Issue	Date
1	DESIGN REVIEW	07.26.18
2	FOR PERMIT	09.07.18



17 PROPOSED 2ND FLOOR PHOTOMETRIC STUDIES
Scale: 1/4" = 1" - 00"



18 2ND FLOOR LIGHTS AND WIRING
ALL LIGHT WIRING ARE AWG18
NTS

LUMINARIES PARTS LIST								
INDEX	MANUFACTURER	LUMINAIRE TYPE	ITEM NUMBER	FITTING	LUMINOUS FLUX	LIGHT LOSS FACTOR	CONNECTED LOAD	QUANTITY
1	LTS	LUZ23-T 13.007.30	LUZ23-T 13.007.30	1xLED	2380 lm	0.80	18 W	13
2	Regent	System batten luminaire Troq LED m1500 43W 5800,00lm CRI >8	1021.3076	1xTRAQ INS m1500 LED5800-840 NB WH ONF E3h	5800 lm	0.80	43 W	4
3	LIGMAN	All surface exterior downlight round dia. 8.65"	UAL-80361	1xCFTR 32W	2040 lm	0.80	28 W	4

#	Name	Parameter	Min	Max	Average	Min/average	Min/max
1	Workplane 5	Perpendicular illuminance (Adaptive)	1.24 lx	904 lx	188 lx	0.01	0.00
2	Workplane 6	Perpendicular illuminance (Adaptive)	21.1 lx	779 lx	187 lx	0.11	0.03
3	Workplane 7	Perpendicular illuminance (Adaptive)	45.0 lx	787 lx	260 lx	0.17	0.06
4	Workplane 8	Perpendicular illuminance (Adaptive)	19.5 lx	782 lx	159 lx	0.12	0.02
5	Workplane 9	Perpendicular illuminance (Adaptive)	9.11 lx	833 lx	201 lx	0.05	0.01
6	Workplane 10	Perpendicular illuminance (Adaptive)	6.60 lx	858 lx	171 lx	0.04	0.01
7	Workplane 11	Perpendicular illuminance (Adaptive)	7.83 lx	872 lx	183 lx	0.04	0.01

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Date:
 SEP. 04, 2018
 Scale:
 AS NOTED

DRAWING TITLE:
 PROPOSED 2ND FLOOR LIGHTING PLANS

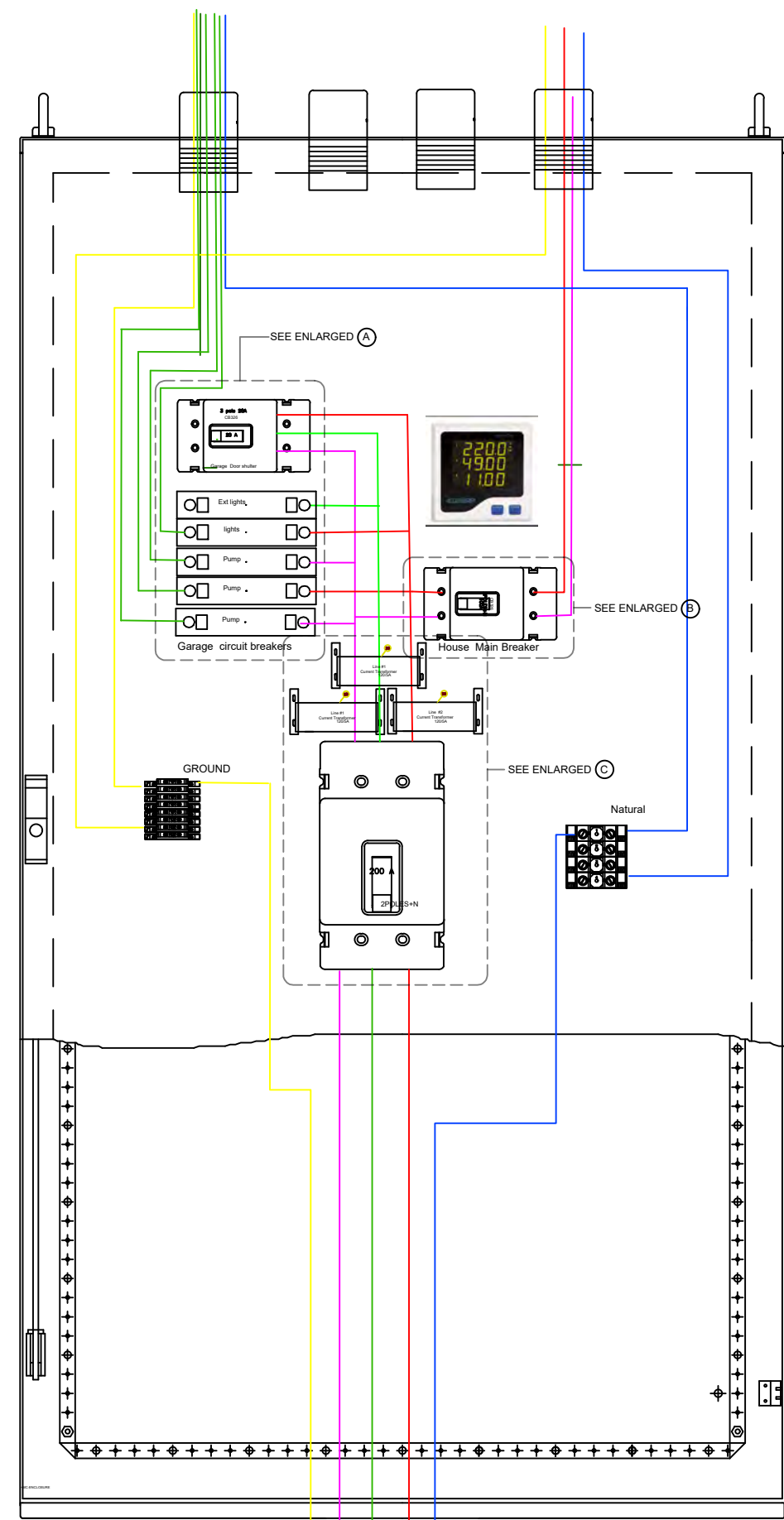
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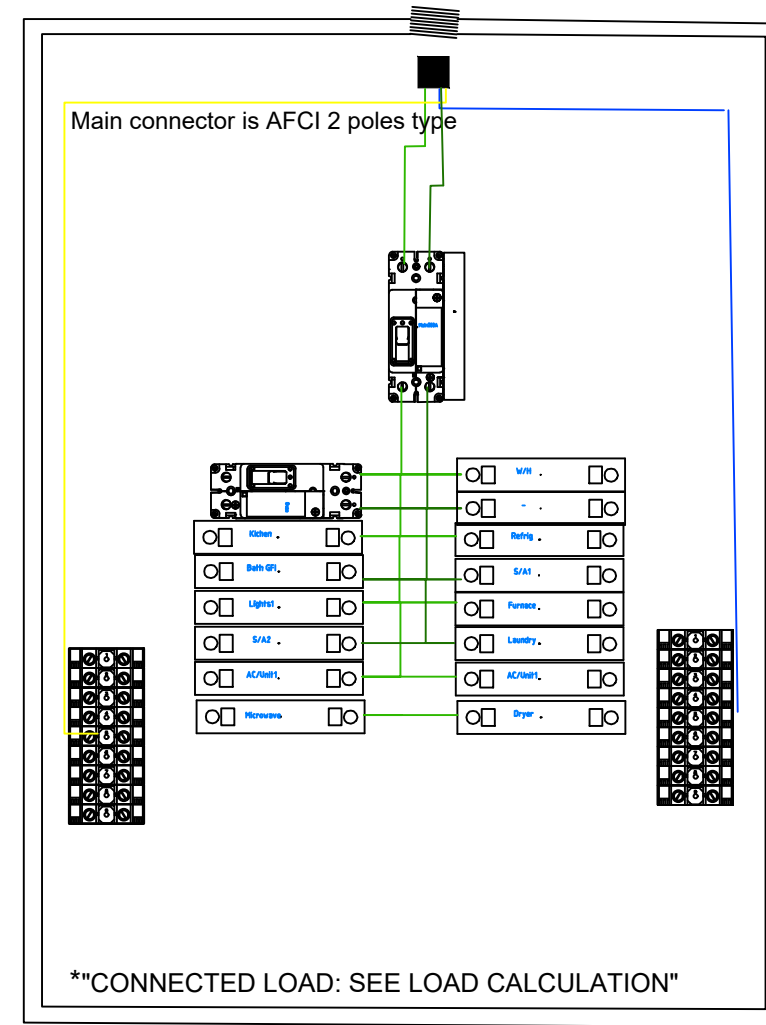
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MDB 200A 3 PHASE
 BLUE WIRE IS NATURAL
 RED AND GREEN AND VIOLET ARE POLES
 YELLOW IS GROUND



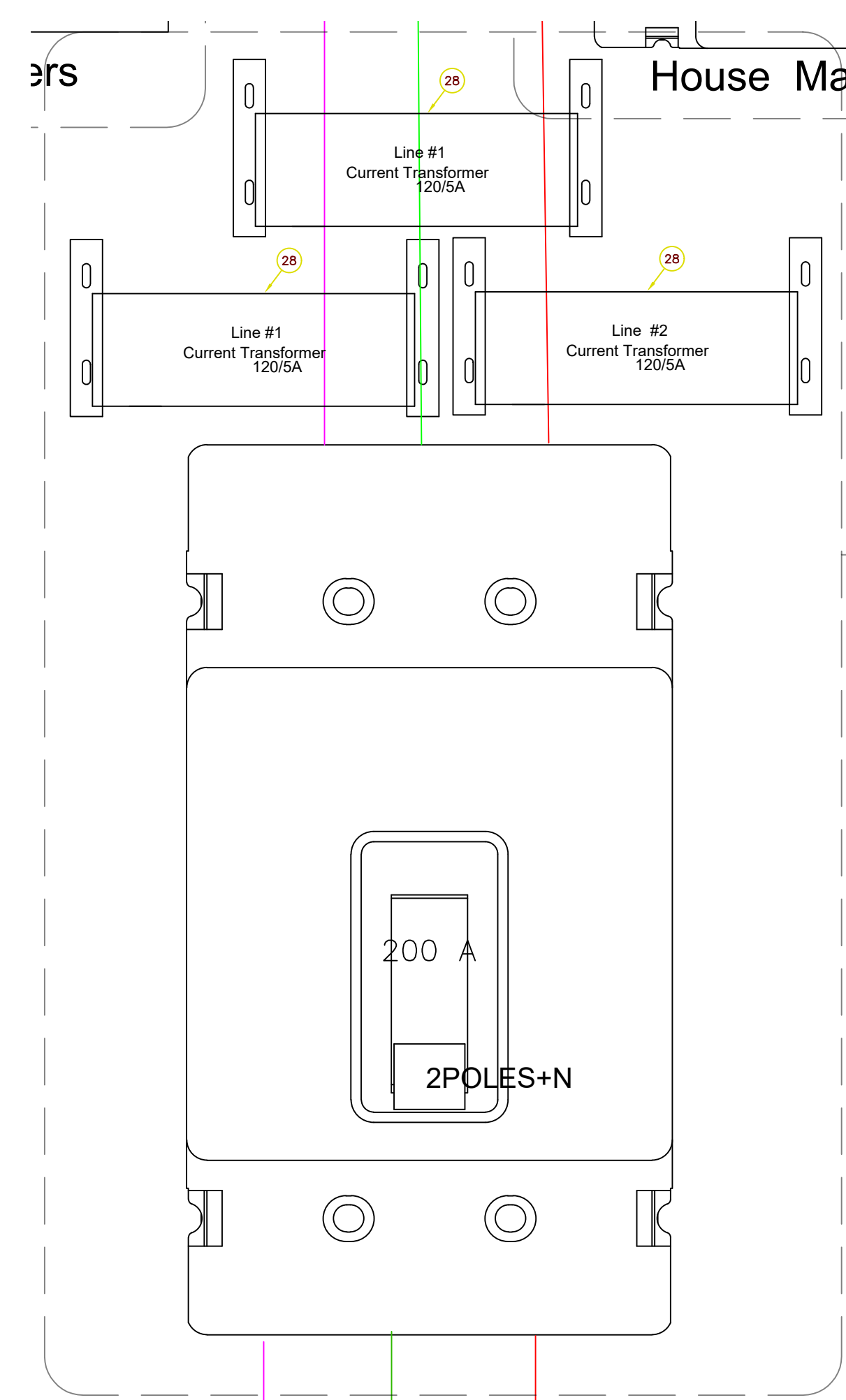
CONNECTED LOAD: SEE LOAD CALCULATION

Table 326.80 Ampacity of Type IGS Cable

Size (kcmil)	Amperes	Size (kcmil)	Amperes
250	119	2500	376
500	168	3000	412
750	206	3250	429
1000	238	3500	445
1250	266	3750	461
1500	292	4000	476
1750	315	4250	491
2000	336	4500	505
2250	357	4750	519

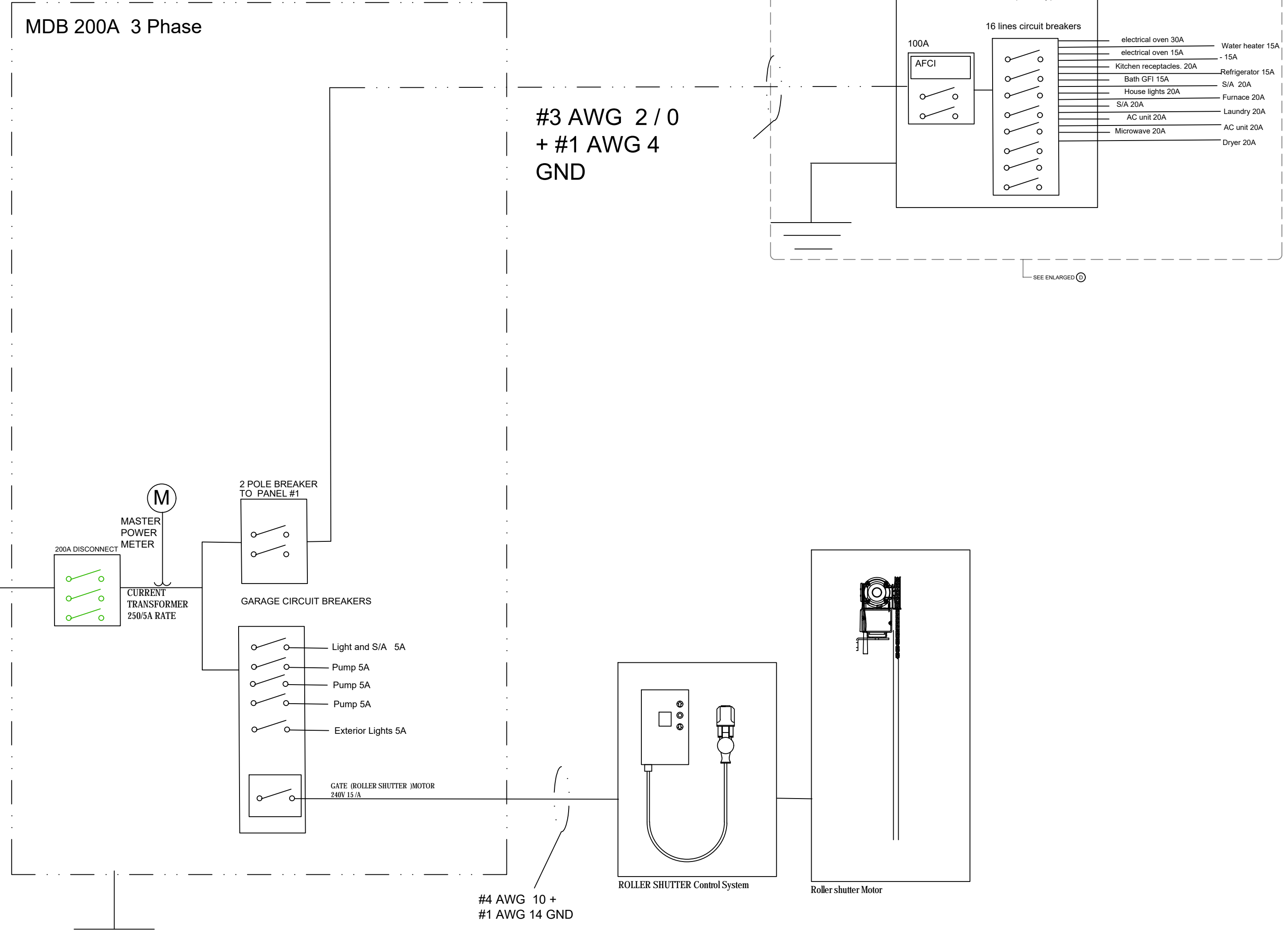
DISTRIBUTION BOARD					
120/208V			Panel A: 200A		
Application	Ampercity	circuit No.	Application	Ampercity	Application
electrical oven	30	1	water heater	15	
electrical oven	30	3		15	
Kitchen receptacles	20	5	Refrigerator	15	
Bath GFI	20	7	S/A	20	
House lights	20	9	Furnace	20	
S/A	20	11	Laundry	20	
A/C Unit	20	13	A/C Unit	20	
Microwave	20	15	Drayer	20	

19 PROPOSED DISTRIBUTION BOARD NTS



B

C

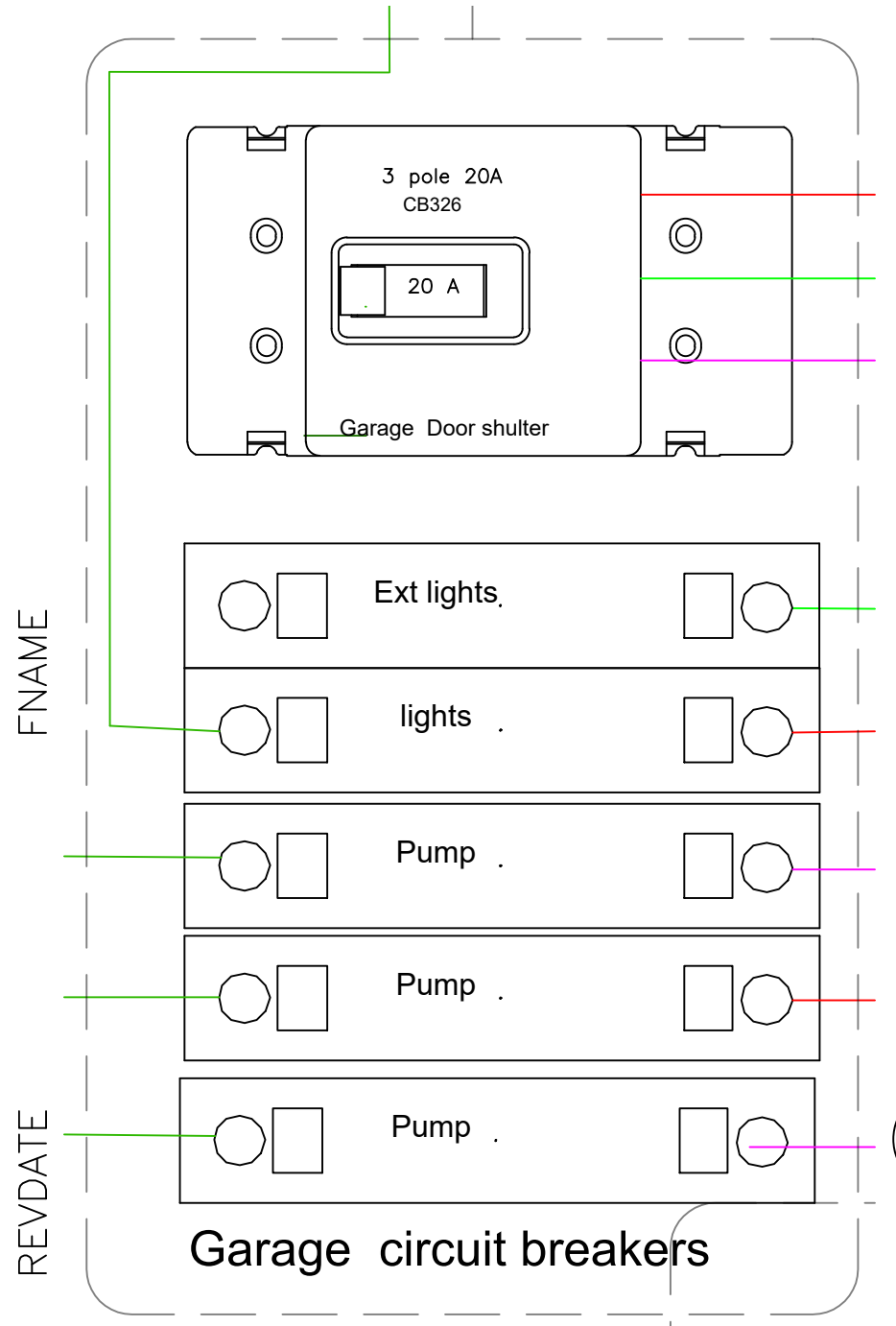


#3 AWG 2 / 0
 + #1 AWG 4
 GND

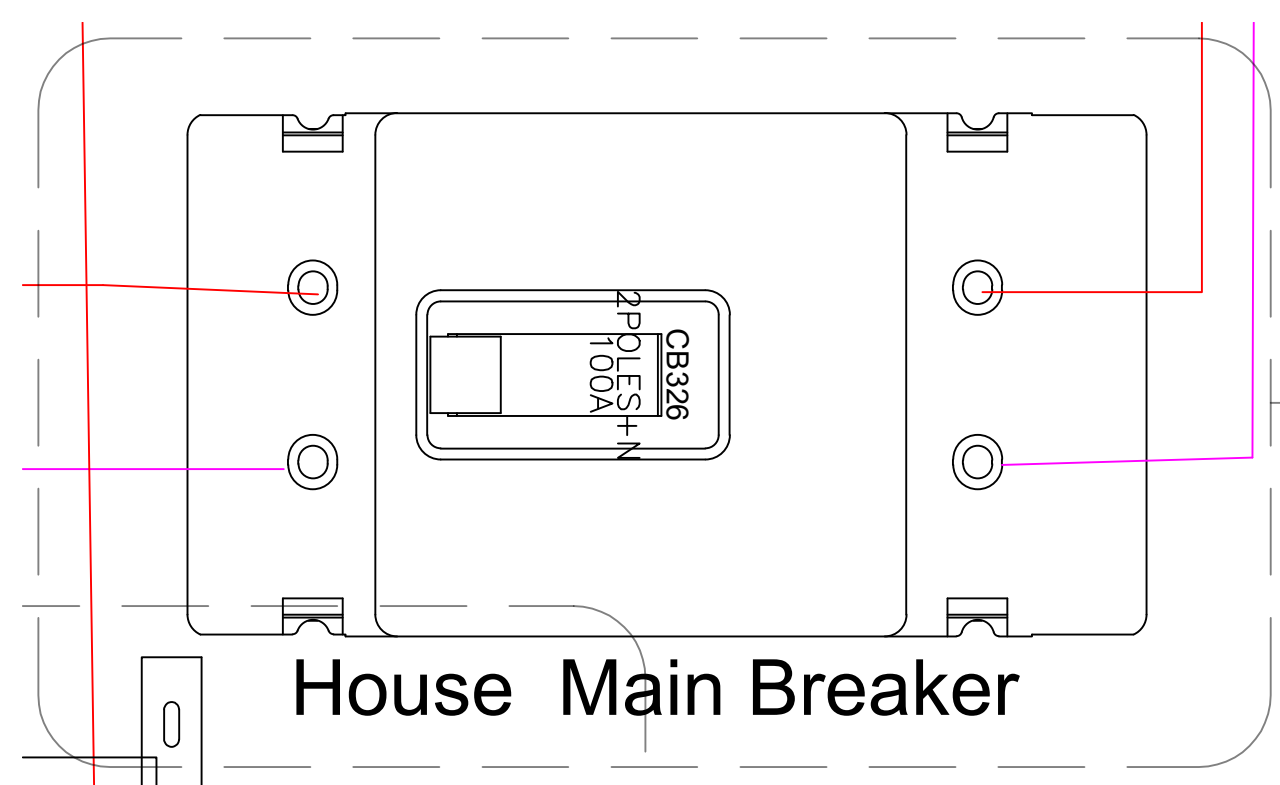
#3 AWG 4 / 0 +
 #1 AWG 4 GND

#4 AWG 10 +
 #1 AWG 14 GND

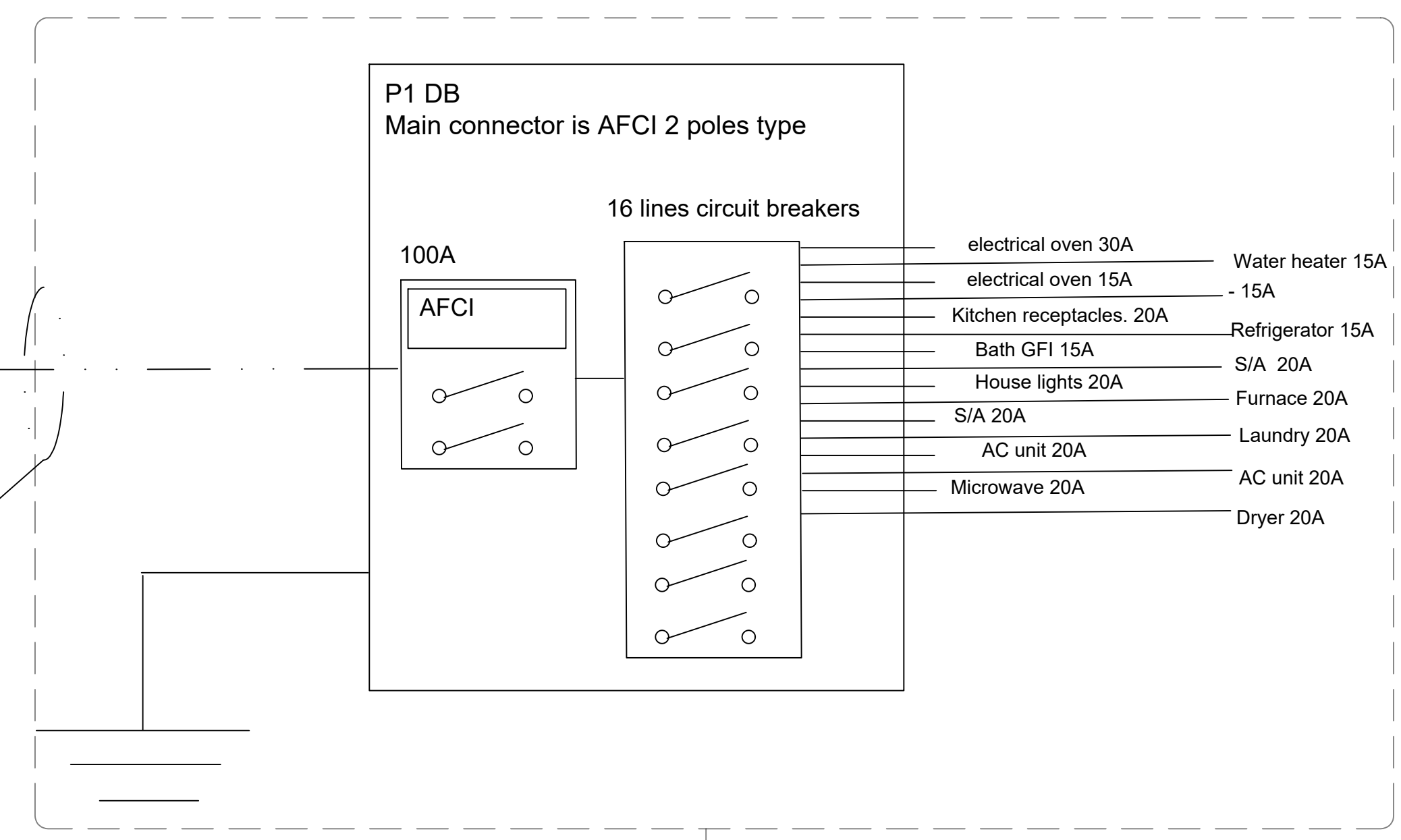
20 MDB AND DP SCHEMATICS NTS



A



House Main Breaker



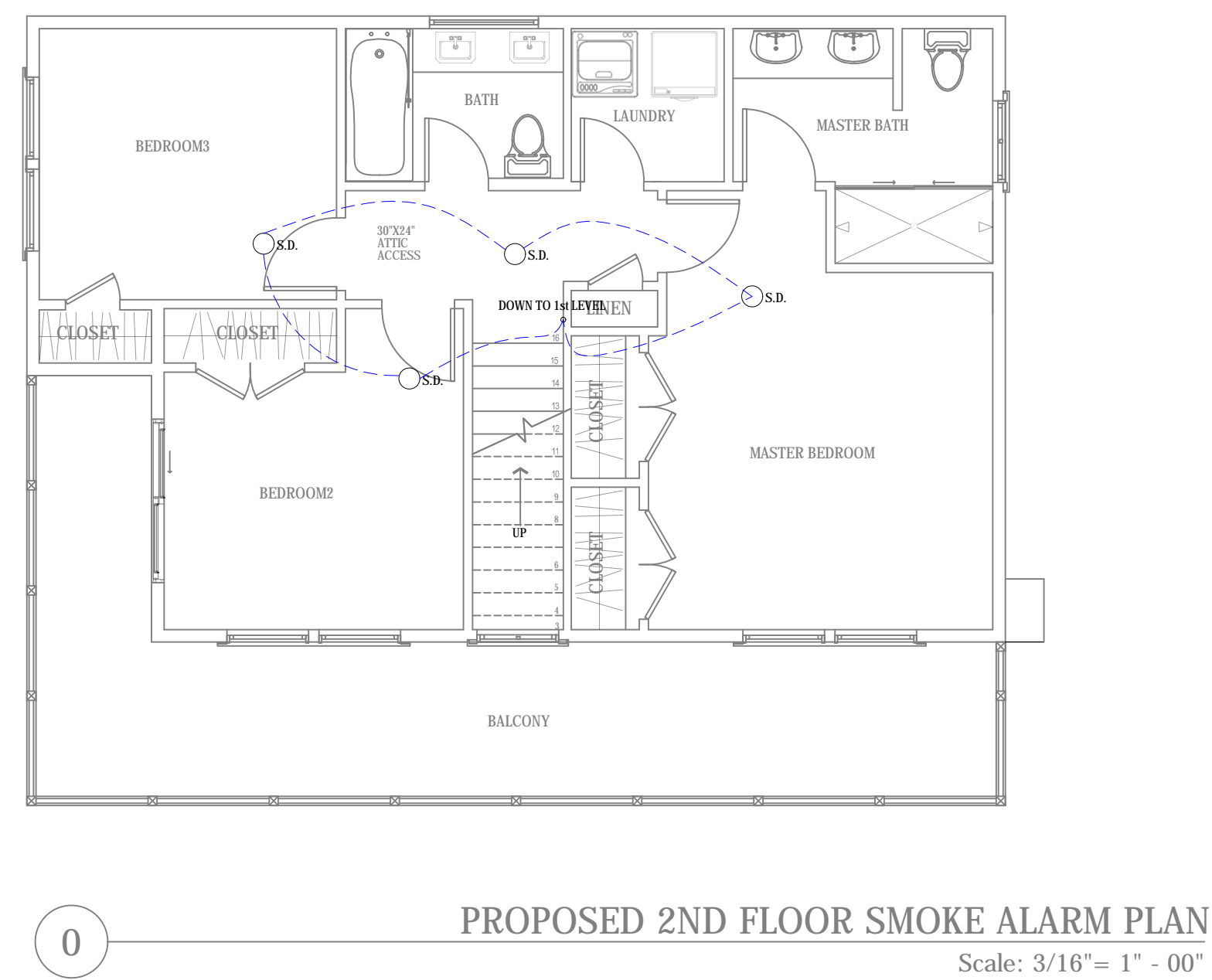
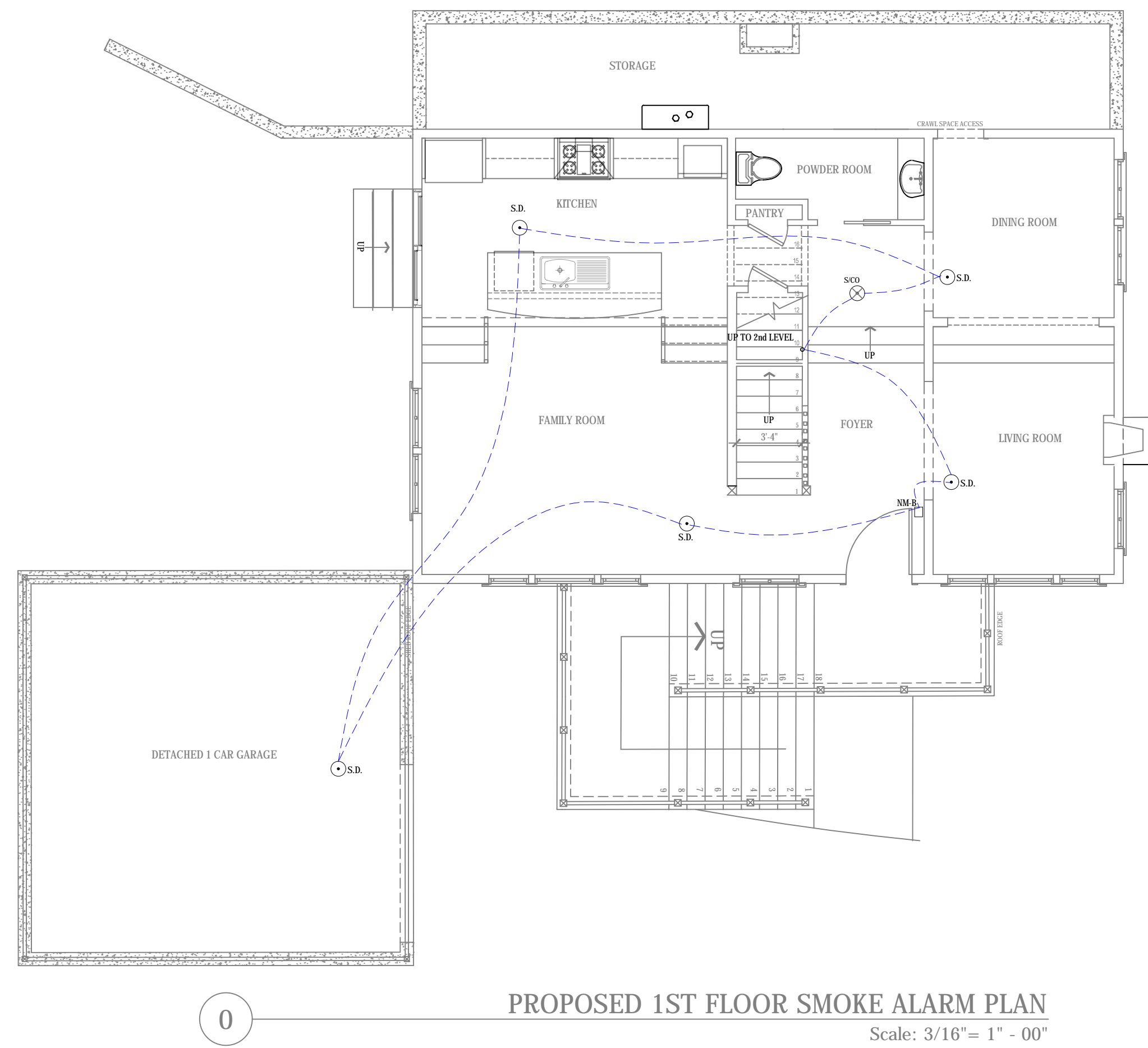
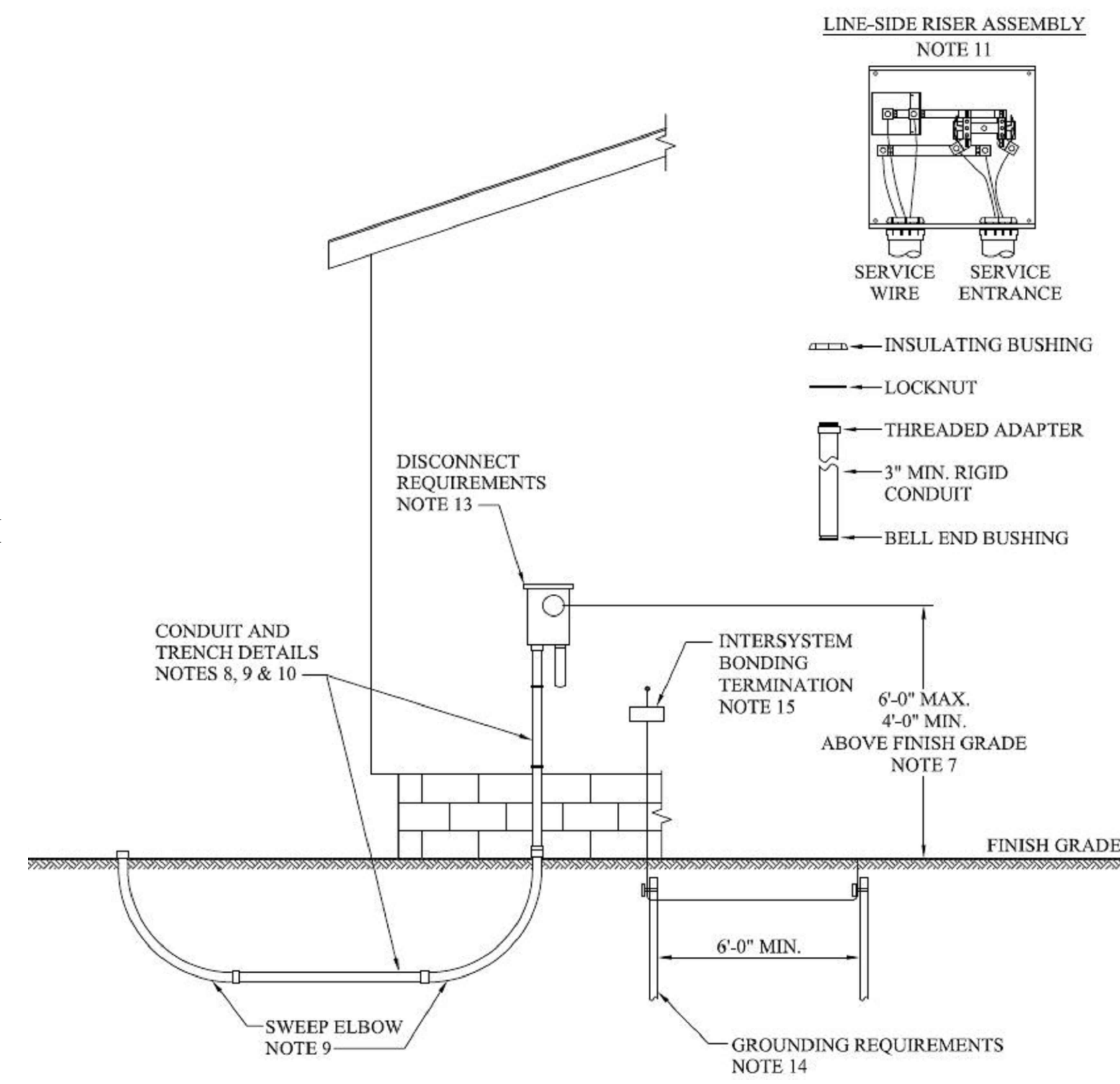
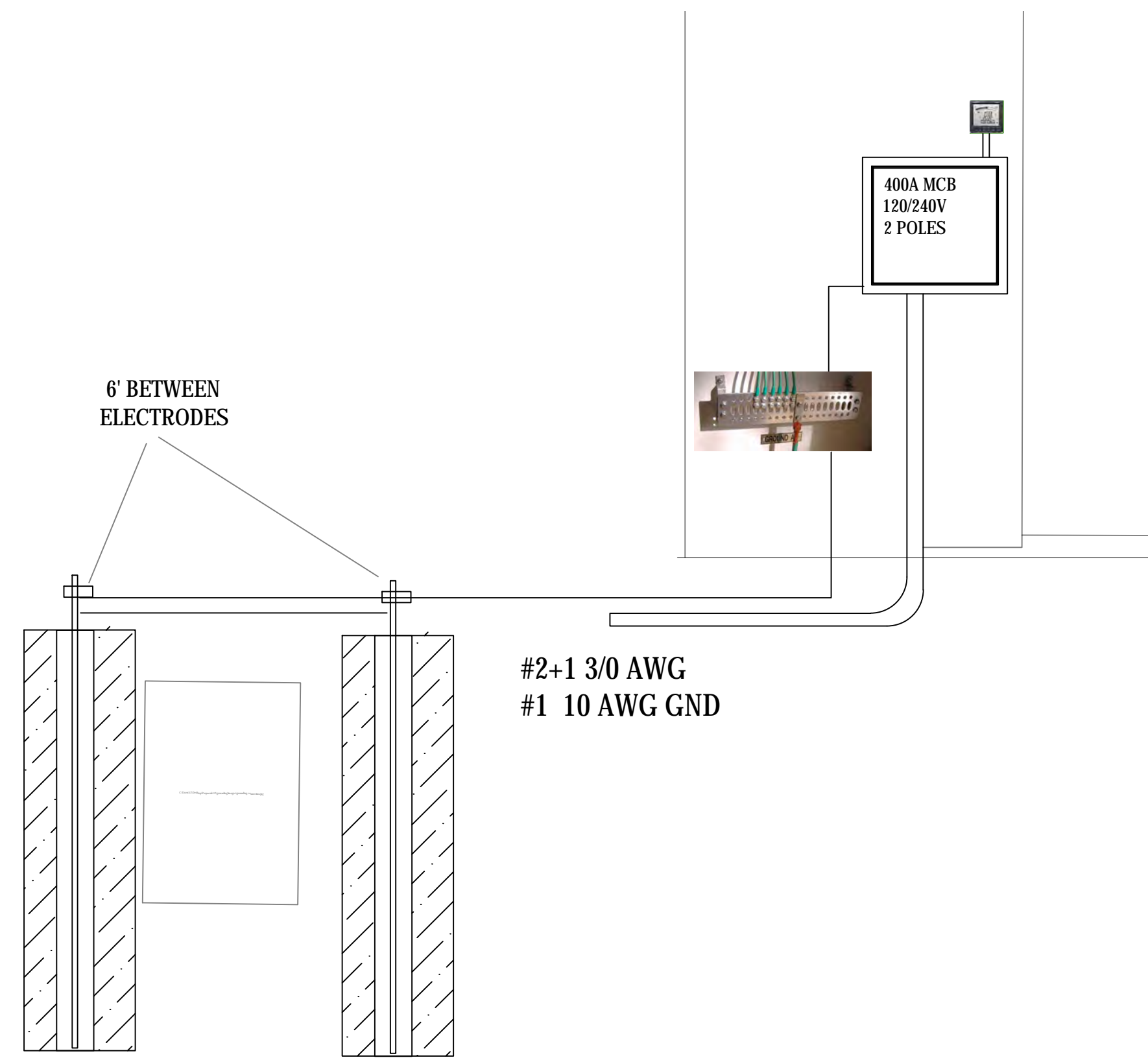
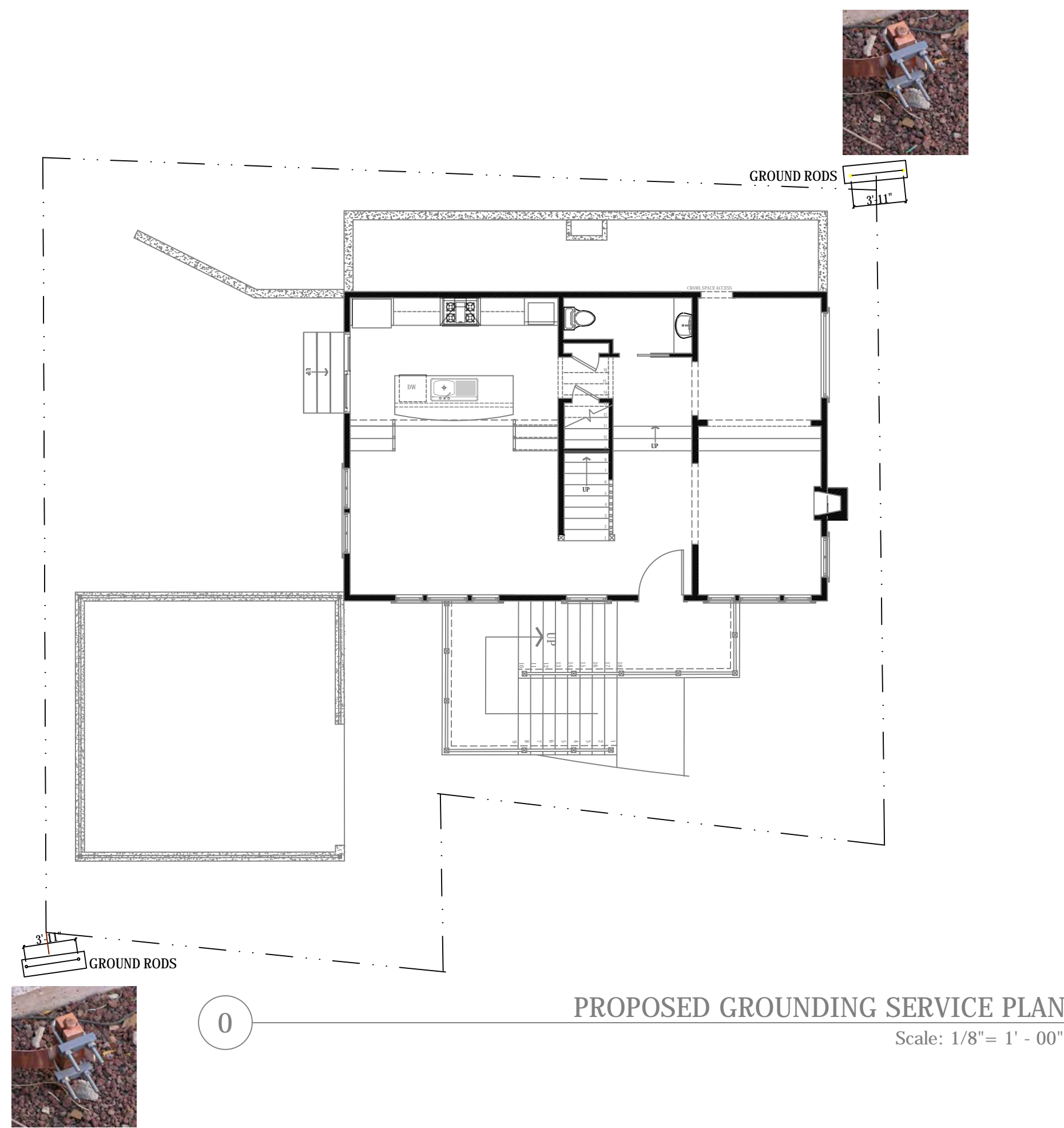
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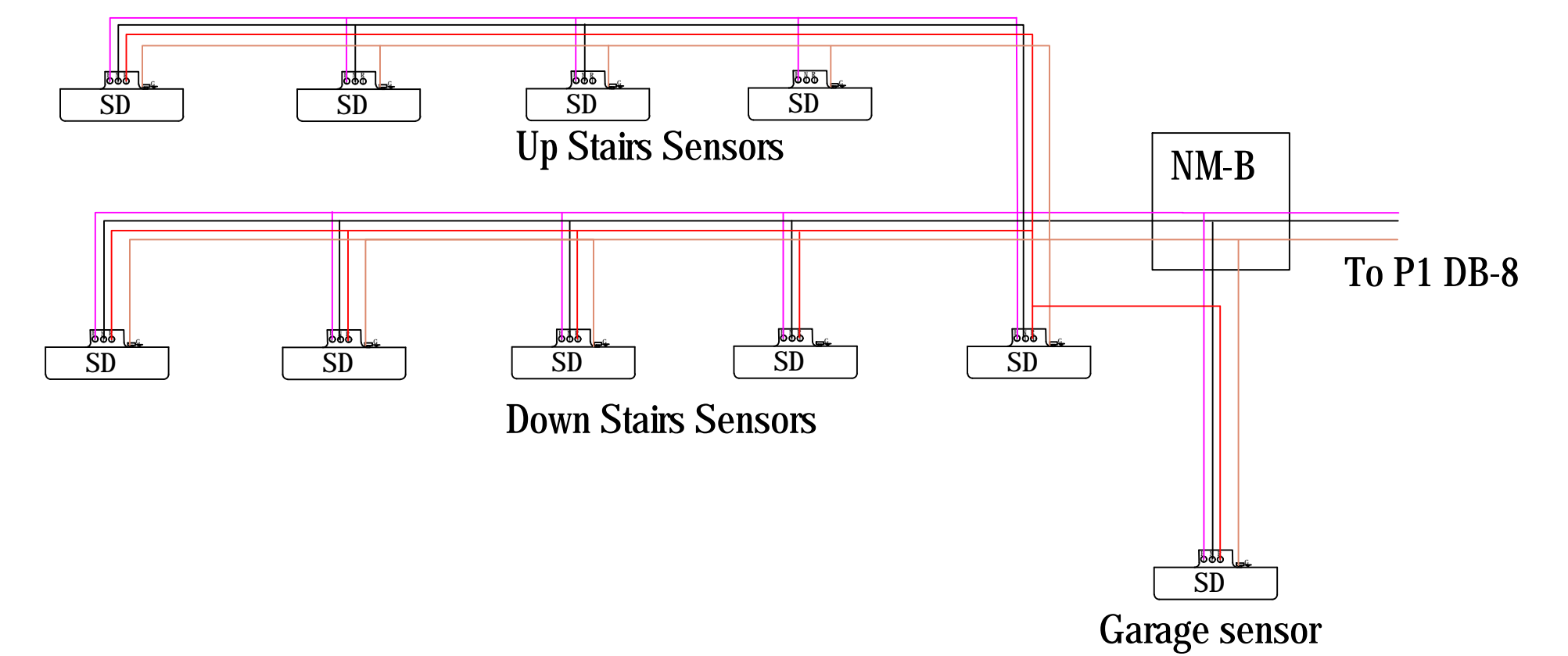
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CALIFORNIA STATE FIRE MARSHAL (CSFM) NOTE:

A SMOKE ALARM INSTALLED IN EACH SEPARATE SLEEPING AREA (IN THE VICINITY, BUT OUTSIDE BEDROOMS), AND HEAT OR SMOKE ALARMS IN THE LIVING ROOMS, DINING ROOMS, BEDROOMS, KITCHENS, ALL WAYS, FINISHED ATTICS, FURNACE ROOMS, CLOSETS, UTILITY AND STORAGE ROOMS, BASEMENTS, AND ATTACHED GARAGES.



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Date: SEP. 04, 2018
Scale: AS NOTED
DRAWING TITLE: PROPOSED GROUNDING SERVICE AND PROTECTIONS PLANS
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PLUMBING SPECIFICATIONS

GENERAL PLUMBING REQUIREMENTS:

SCOPE
THE INTENT OF THE SPECIFICATION AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL PLUMBING SYSTEM. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETE THE PLUMBING WORK.

SITE EXAMINATION
THE PLUMBING CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS WHERE FIXTURES, EQUIPMENT, AND PIPING WILL BE INSTALLED AND WILL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE PLUMBING WORK.

STANDARDS
EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF ASME, ASTM, UL, NEMA, ANSI, ASHRAE, NFPA, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

PERMITS AND FEES
THE PLUMBING CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES AND INSPECTIONS NECESSARY TO COMPLETE THE PLUMBING WORK.

WARRANTY
THE PLUMBING CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

PIPING INSULATION:
WATER PIPING
PROVIDE THERMAL INSULATION ON ALL HOT AND COLD WATER PIPING, AND HORIZONTAL WASTE PIPING IN CEILING SPACE WITH SELF-SEALING CLOSED CELL FOAM OR JACKETED FIBERGLASS INSULATION. FIRE HAZARD RATING FOR INSULATION, ADHESIVES, SEALERS, AND COATINGS SHALL NOT EXCEED 25 FOR FLAME SPREAD, 50 FOR FUEL CONTRIBUTED, AND 50 FOR SMOKE DEVELOPED. UNLESS OTHERWISE REQUIRED BY THE LOCAL AUTHORITY OR ENERGY CODES THE MINIMUM INSULATION LEVELS SHALL BE AS FOLLOWS:

PIPE SIZE	INSULATION THICKNESS
1" DIA. OR LESS	1"
1" - 2" DIA.	1"
2" DIA. OR GREATER	1-1/2"

SAFETY COVERS
THE PLUMBING CONTRACTOR SHALL PROVIDE SAFETY COVERS FOR ALL EXPOSED PIPING AND EQUIPMENT IN UNFINISHED AREAS.

PIPING:
SOIL, WASTE AND VENT PIPING
SCHEDULE 40 ABS OR PVC PIPE AND FITTINGS WITH SOLVENT WELD MAY BE SUBSTITUTED FOR SOIL, WASTE AND VENT PIPING ABOVE AND BELOW GRADE IF ALLOWED BY LOCAL AUTHORITY. HORIZONTAL RUNS SHALL DRAIN AT A GRADE OF 1/4 INCH PER FOOT WHERE POSSIBLE BUT IN NO CASE LESS THAN 1/8" PER LF

DOMESTIC WATER PIPING
DOMESTIC WATER PIPING 2" AND SMALLER SHALL BE COPPER TUBE WITH WROUGHT COPPER SWEAT FITTINGS JOINED WITH LEAD FREE SOLDER. PROVIDE TYPE "L" COPPER TUBE ABOVE GRADE AND TYPE "K" BELOW GRADE.

CONDENSATE DRAINAGE PIPING
THE PLUMBING CONTRACTOR SHALL PROVIDE CONDENSATE DRAINS FOR AIR HANDLING UNITS AND STARBUCKS EQUIPMENT (REFER SCHEDULE BELOW). CONDENSATE DRAINAGE PIPING SHALL BE TYPE "M" COPPER TUBING WITH WROUGHT COPPER SWEAT FITTINGS JOINED WITH 50/50 SOLDER.

NATURAL GAS PIPING- NO GAS USED THIS JOB.
GAS PIPING SHALL BE SCHEDULE 40, SEAMLESS, BLACK STEEL PIPE. PROVIDE PIPING SUPPORT BLOCKING ON ROOF, COMPATIBLE WITH ROOFING SYSTEM.

HANGERS & SUPPORTS
THE PLUMBING CONTRACTOR SHALL FURNISH ALL PIPE SUPPORTS REQUIRED FOR HIS EQUIPMENT AND MATERIAL. ALL HORIZONTAL RUNS OF PIPING SHALL BE SUPPORTED BY PIPE HANGERS SPACED NOT MORE THAN 10 FEET O.C. FOR PIPES 1-1/4" AND LARGER, AND 8 FEET O.C. FOR PIPES SMALLER THAN 1-1/4" AND AT EACH JOINT FOR SOIL OR WASTE PIPE. ADDITIONAL SUPPORTS SHALL BE PROVIDED WHERE REQUIRED TO PREVENT SAGGING. HANGERS AND PIPE ATTACHMENTS TO BE FACTORY FABRICATED WITH GALVANIZED COATINGS; NONMETALLIC COATED FOR HANGERS IN DIRECT CONTACT WITH COPPER TUBING.

CONNECTIONS
INSTALL UNIONS ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL DIELECTRIC COUPLINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS. SCREW JOINT STEEL PIPING UP TO AND INCLUDING 1-1/2". WELD PIPING USE LEAD FREE SOLDER FOR SOLDERING DOMESTIC WATER COPPER PIPE.

CLEANOUTS
PROVIDE J.R. SMITH OR EQUIVALENT FLOOR AND WALL CLEANOUTS AS INDICATED ON THE DRAWINGS OR WHERE REQUIRED IN ALL SOIL, WASTE, AND DRAIN LINES. IN AREAS WITH CERAMIC TILE OR CARPETED FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP. IN AREAS WITH RESILIENT FLOORING, PROVIDE CLEANOUTS WITH SQUARE, ADJUSTABLE, NICKEL BRONZE TOP WITH TILE RECESS. CLEANOUTS SHALL BE SAME SIZE AS PIPE EXCEPT THAT CLEANOUTS LARGER THAN 4" WILL NOT BE REQUIRED. WHERE CLEANOUTS OCCUR IN WALLS OF FINISHED AREAS, THEY SHALL BE CONCEALED BEHIND CHROME PLATED ACCESS COVERS.

INSTALLATION
INSTALL PIPING FREE OF SAGS AND BENDS. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS. INSTALL SLEEVES FOR PIPES PASSING THROUGH A TRUCK WALLS, GYPSUM-BOARD PARTITIONS, CONCRETE FLOOR, AND ROOF SLABS. SEAL PIPE PENETRATIONS THROUGH RATED CONSTRUCTION WITH FIRESTOPPING SEALANT MATERIAL. UNDERGROUND WATER AND SEWER LINES SHALL BE LAID IN SEPARATE TRENCHES WITH A MINIMUM HORIZONTAL SPACING AS REQUIRED BY CODE, EXCAVATED TO THE PROPER DEPTH AND GRADED TO PRODUCE THE REQUIRED FALL.

TESTING
ALL PIPES SHALL BE TESTED BY AN APPROVED METHOD BEFORE THEY ARE BACKFILLED OR CONCEALED. AFTER TESTING IS COMPLETE, THE PLUMBING CONTRACTOR SHALL DISINFECT THE POTABLE WATER SYSTEM AS REQUIRED BY LOCAL AUTHORITY. TEST WATER PURITY ACCORDING TO LOCAL REQUIREMENTS AND SUBMIT CERTIFIED TEST RESULTS TO ENGINEER FOR REVIEW AND APPROVAL.

PLUMBING VALVES:
GENERAL
PLUMBING CONTRACTOR TO PROVIDE VALVES WHERE INDICATED ON PLANS AND AS NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. INSTALL VALVES FOR EACH FIXTURE AND ITEM OF EQUIPMENT. PROVIDE BRAIDED STAINLESS STEEL HOSE (UNLESS OTHERWISE NOTED) BETWEEN VALVE AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. LOCATE SHUT-OFF VALVES ADJACENT TO EQUIPMENT FOR EASY ACCESS SUCH THAT VALVES CAN BE REACHED WITHOUT MOVING EQUIPMENT.

VALVES
PROVIDE VALVES FOR WORKING PRESSURE IN WATER PIPING OF 125 PSI OR GREATER. UNLESS NOTED OTHERWISE VALVES SHALL BE AS FOLLOWS:

VALVE TYPE	MANUFACTURER & MODEL NO.
CHECK VALVE UP TO 3"	CRANE OR EQUIVALENT
GLOBE VALVE UP TO 3"	CRANE OR EQUIVALENT
GATE VALVE UP TO 3"	APOLLO OR EQUIVALENT
TEMP. & PRESSURE RELIEF	WATTS OR EQUIVALENT
SHOCKSTOP	WADE OR EQUIVALENT
BACKFLOW PREVENTOR	WATTS OR EQUIVALENT
VACUUM RELIEF VALVE	WATTS OR EQUIVALENT
PRESSURE REDUCING VALVE	WATTS OR EQUIVALENT
TRAP SEAL PRIMER	J.R. SMITH OR EQUIVALENT

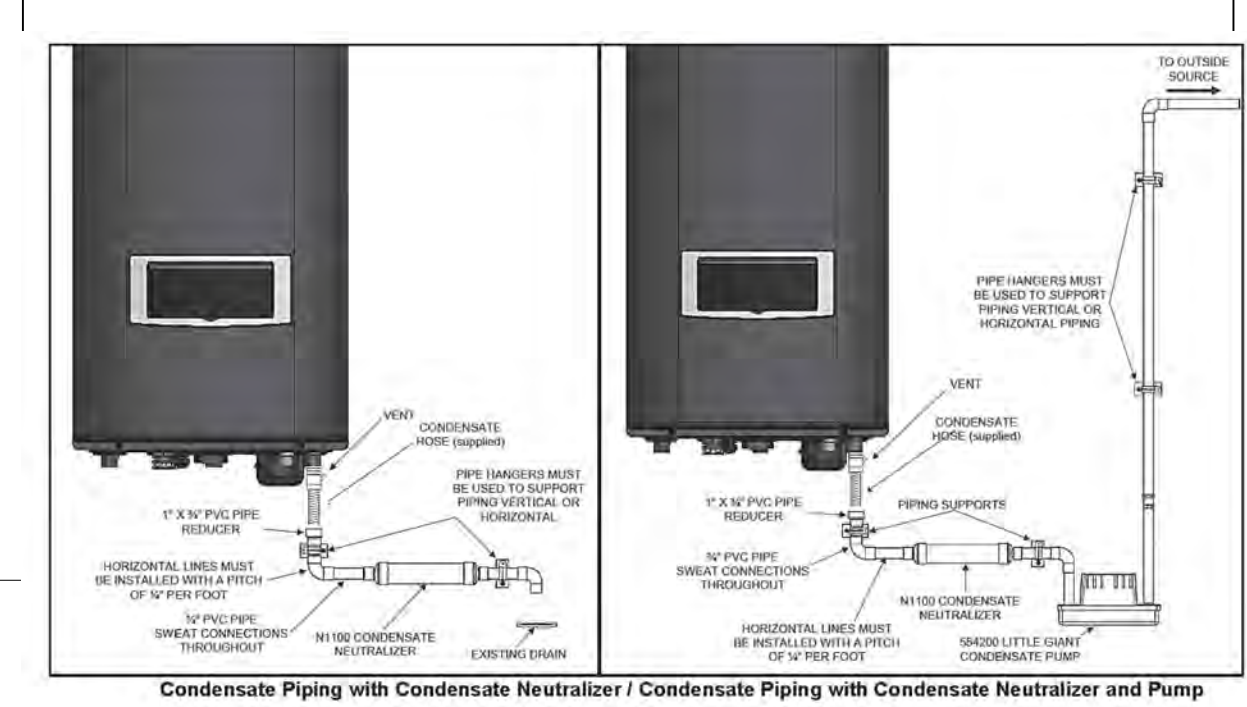
SUPPLY
IF WATER PRESSURE SUPPLIED TO STORE IS NOT BETWEEN 60 PSI MIN. AND 65 PSI MAX. THEN PROVIDE A PRESSURE REGULATOR TO MAIN SUPPLY TO MAINTAIN WATER PRESSURE. PROVIDE BACKFLOW PREVENTION ON WATER SERVICE IF REQUIRED BY LOCAL CODES.

SECTION 4.503 FIREPLACES
4.503.1
General. Any installed gas fireplace shall be a direct vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

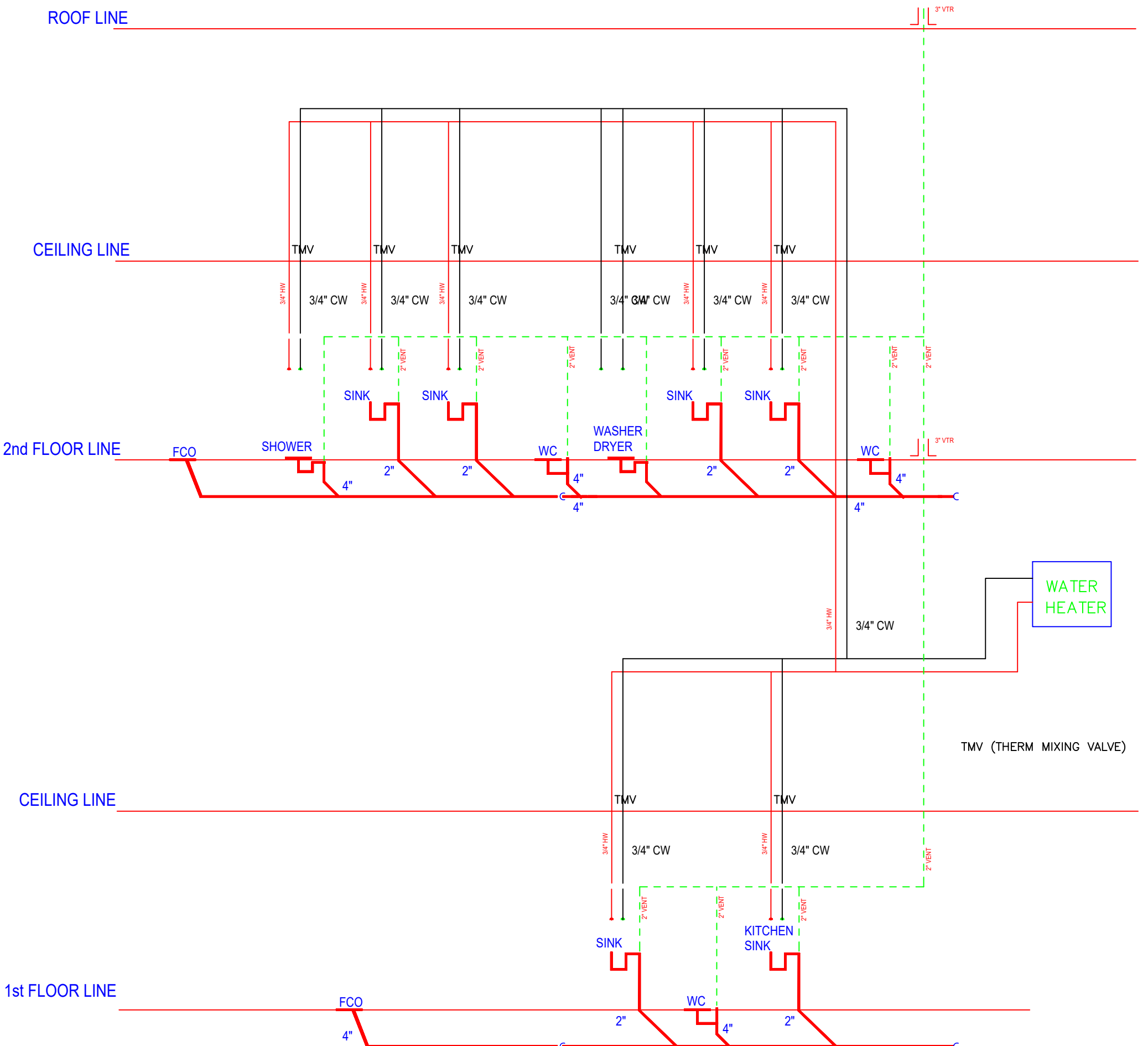
PLUMBING SCHEDULES

FIXTURE	PLUMBING FIXTURE SCHEDULE				
	WASTE	TRAP	VENT	COLD WATER	HOT WATER
WATER CLOSET (ADA)	4"	INTERGERAL	2"	1-1/2"	-
LAVATORY	2"	2"	1-1/2"	1-1/2"	1-1/2"
HAND SINK	2"	1-1/4X1 1/2"	1-1/2"	1-1/2"	1-1/2"
BATH TUBE	2"	2"	1-1/2"	1-1/2"	1-1/2"
HOSE BIB	2"	2"	-	1-1/2"	-
WATER TANK	2"	2"	1-1/2"	1-1/2"	-
FLOOR DRAIN	2"	2"	1-1/2"	-	-
DISHWASHER	2"	2"	1-1/2"	1-1/2"	1-1/2"
WASHING MACHINE	2"	2"	1-1/2"	1-1/2"	1-1/2"
REFRIGERATOR	2"	-	-	-	-

PLUMBING DETAILS



1 WATER HEATER



PLUMBING LEGEND

- (E) EXISTING PIPE (EXIST.), (EX), (E)
- SANITARY DRAIN PIPE (SAN)
- VENT PIPE (V.P.)
- D CONDENSATE DRAIN PIPE (D)
- CW COLD WATER PIPE (CW)
- HW HOT WATER PIPE (HW)
- OS&Y OUTSIDE SCREW AND YOKE GATE VALVE (OS&Y)
- REDUCER
- PRV PRESSURE REDUCING VALVE (PRV)
- GV GATE VALVE (GV)
- CV CHECK VALVE (CV)
- BP BACKFLOW PREVENTOR
- PT PIPE TURNING UP
- PD PIPE TURNING DOWN
- P PLUMBING STACK (SANITARY AND VENT)
- W WATER RISER
- CD CONDENSATE DRAIN RISER
- CL CENTER LINE
- POINT OF CONNECTION - NEW TO EXISTING
- FD FLOOR DRAIN (FD)
- CD CONDENSATE DRAIN (CD)
- EW EXISTING GATE VALVE
- FW FILTERED COLD WATER
- TW TEMPERED WATER (110°)
- SW SOFT COLD WATER
- NW NANO COLD WATER
- CW COLD WATER
- HW HOT WATER (140°)
- WH WATER HEATER
- FF FINISHED FLOOR
- VTR VENT THRU ROOF
- WC WATER CLOSET
- UR URINAL
- L LAVATORY
- SK SINK
- MS MOP SINK
- 3CS THREE COMPARTMENT SINK
- HS HAND SINK
- FPFB FROST PROOF HOSE BIB
- FFCO FINISHED FLOOR CLEAN OUT
- (E) EXISTING TO REMAIN
- (ER) EXISTING - RELOCATED
- GD GARBAGE DISPOSAL
- BP BOOSTER PUMP
- STM STORM DRAINAGE PIPING
- FS FLOOR SINK
- ICE ICE MAKER
- DPW DIPPER WELL
- ESP ESPRESSO MACHINE
- DW DISH WASHER
- CFE COFFEE MAKER
- WF WATER FILTER
- FT FAUCET TOWER
- WH WATER HEATER
- IH INSTA HOT
- WH WATER HEATER
- WS WATER STATION
- PR PITCHER RINSER
- GPH GALLON PER HOUR
- TMV THERM MIXING VALVE

WATER HEATER								
FIXTURE SYMBOL	MANUFACTURER	MODEL NUMBER	Minimum (Maximum) Cold Water (Flow)	ELECTRICAL DATA			DIMENSIONS	
				VOLT	PHASE	Watt	DIA.	WEIGHT
TANKLESS COMBI BOILER	Westinghouse	199W	19,900 - 199,000 BTU/hr	120	1	165	W 17.25" - H 34" - D 15.5"	96lb

FILENAME

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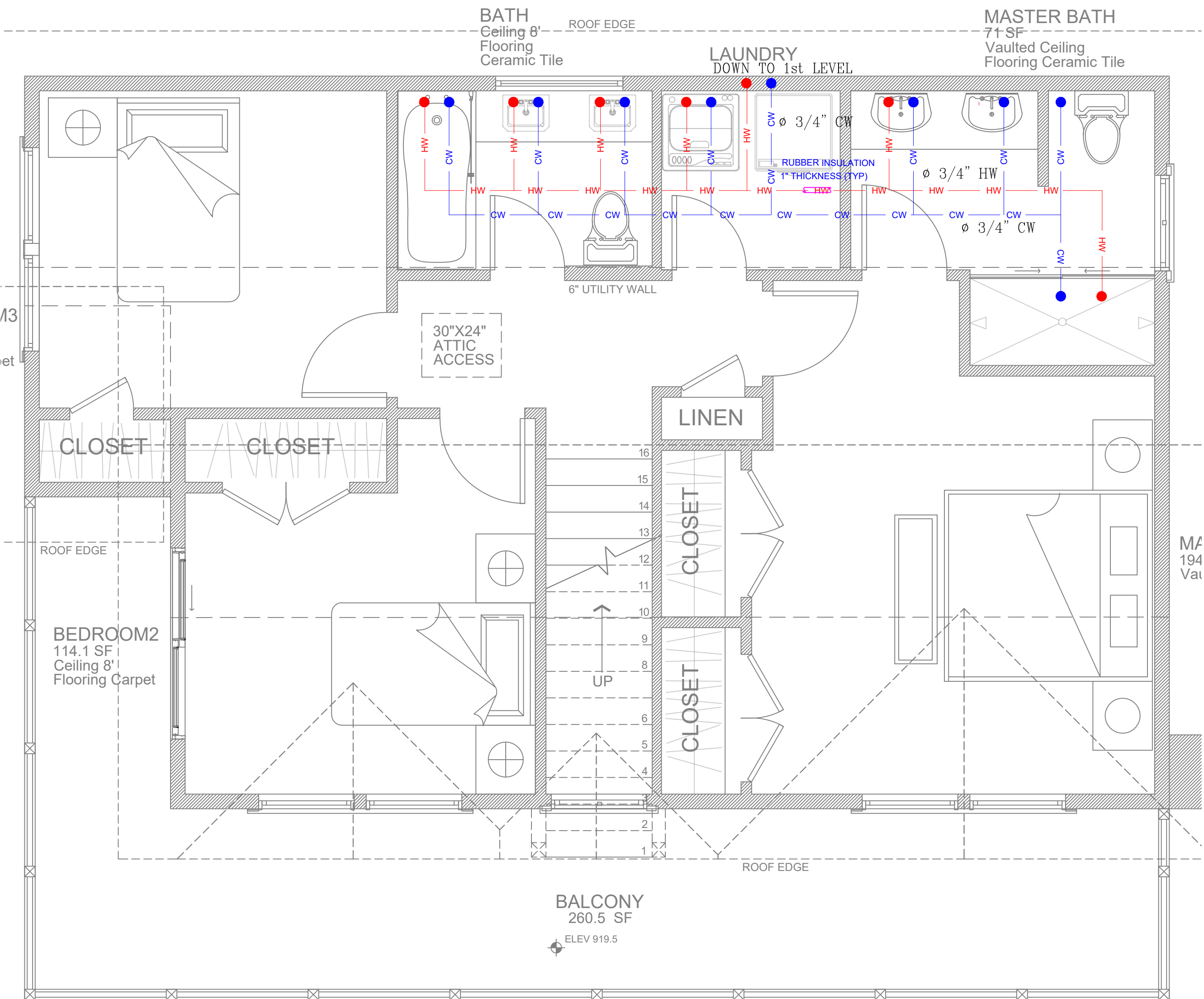
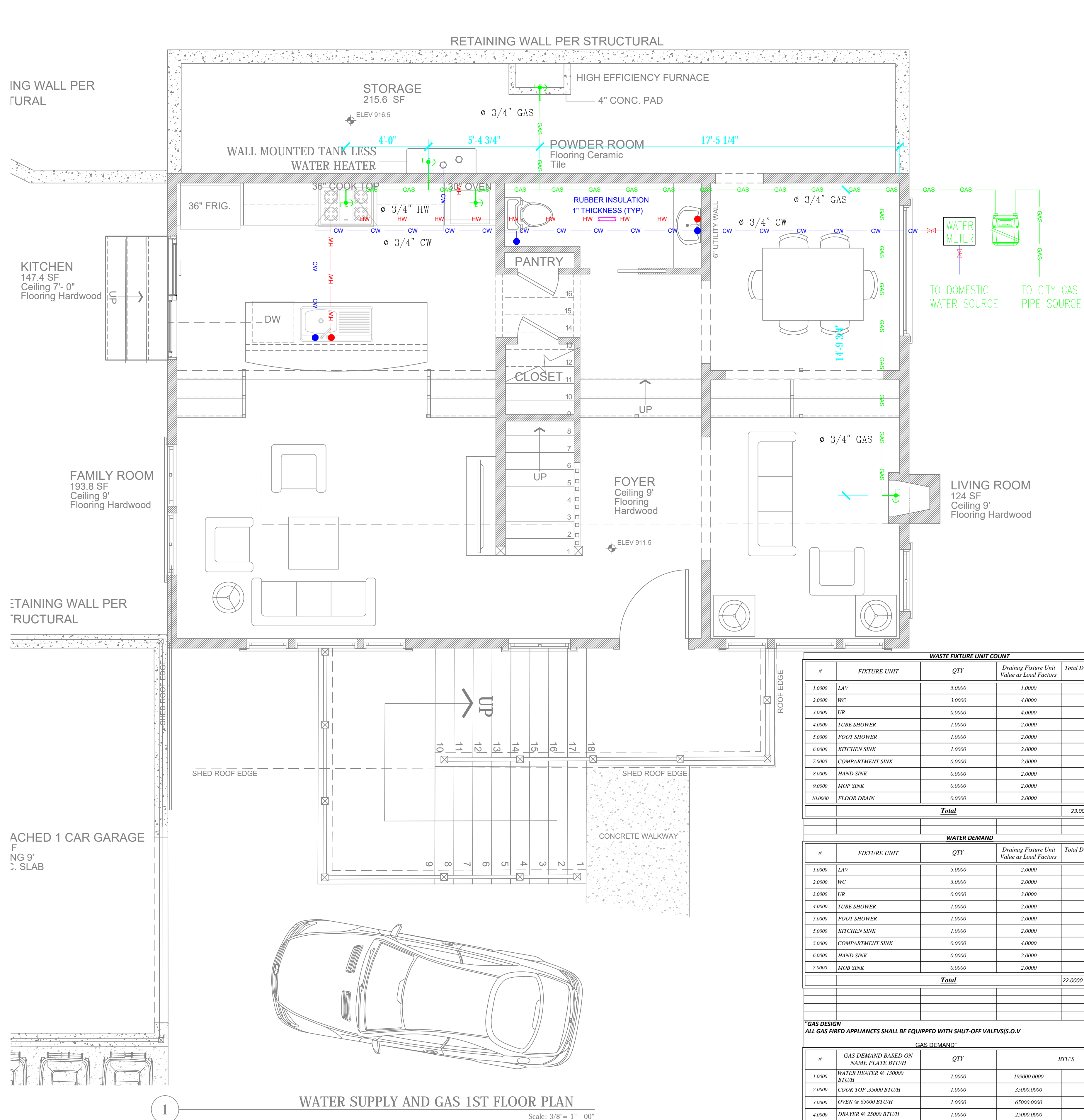
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Project Name and Address:
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Date: SEP. 04, 2018
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WASTE FIXTURE UNIT COUNT				
#	FIXTURE UNIT	QTY	Draining Fixture Unit Value as Load Factors	Total Draining Fixture Unit Value
1.0000	LAV	5.0000	1.0000	5.0000
2.0000	WC	3.0000	4.0000	12.0000
3.0000	UR	0.0000	4.0000	0.0000
4.0000	TUBE SHOWER	1.0000	2.0000	2.0000
5.0000	FOOT SHOWER	1.0000	2.0000	2.0000
6.0000	KITCHEN SINK	1.0000	2.0000	2.0000
7.0000	COMPARTMENT SINK	0.0000	2.0000	0.0000
8.0000	HAND SINK	0.0000	2.0000	0.0000
9.0000	MOP SINK	0.0000	2.0000	0.0000
10.0000	FLOOR DRAIN	0.0000	2.0000	0.0000
Total			23.0000	F.U.S

WATER DEMAND				
#	FIXTURE UNIT	QTY	Draining Fixture Unit Value as Load Factors	Total Draining Fixture Unit Value
1.0000	LAV	5.0000	2.0000	10.0000
2.0000	WC	3.0000	2.0000	6.0000
3.0000	UR	0.0000	3.0000	0.0000
4.0000	TUBE SHOWER	1.0000	2.0000	2.0000
5.0000	FOOT SHOWER	1.0000	2.0000	2.0000
6.0000	KITCHEN SINK	1.0000	2.0000	2.0000
7.0000	COMPARTMENT SINK	0.0000	4.0000	0.0000
8.0000	HAND SINK	0.0000	2.0000	0.0000
9.0000	MOP SINK	0.0000	2.0000	0.0000
Total			22.0000	F.U.S

GAS DEMAND				
#	GAS DEMAND BASED ON NAME PLATE BTU/H	QTY	BTU/S	
1.0000	WATER HEATER @ 19000 BTU/H	1.0000	19000.0000	19000.0000
2.0000	COOK TOP @ 35000 BTU/H	1.0000	35000.0000	35000.0000
3.0000	OVEN @ 65000 BTU/H	1.0000	65000.0000	65000.0000
4.0000	DRYER @ 25000 BTU/H	1.0000	25000.0000	25000.0000
5.0000	A/C 5 TON @ 42000 BTU/H	1.0000	42000.0000	42000.0000
Total			161000.0000	161000.0000

GAS NOTES

INSTALLATION

INSTALLATION SHALL COMPLY WITH CALIFORNIA MECHANICAL CODE AS ADOPTED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION

GAS LINE

BLACK STEEL WITH MALLEABLE FITTINGS. RUN IN FRAMED SPACES AND FURRED SPACES SHOWN ON THE PLANS. UNDER GROUND LINE TO BE VINYL WRAPPED. DO NOT RUN LINES UNDER SLAB.

RECORD DRAWINGS

MAKE NOTE OF ANY CHANGE IN THE LAYOUT MADE IN THE FIELD AND INCORPORATE INTO THE RECORD DRAWINGS TO BE SUBMITTED TO OWNER AT COMPLETION OF THE JOB

COMPLETE AND PROPER INSTALLATION

PROVIDE AND INSTALL ALL ITEMS NECESSARY FOR COMPLETE AND PROPER EXECUTION OF WORK WHETHER SPECIFICALLY MENTIONED OR NOT.

GAS METER NOTE:

- CUSTOMER HOUSE PIPE SHOULD BE 2' FROM FINISHED GRADE.
- CUSTOMER HOUSE PIPE IS ALWAYS ON THE RIGHT SIDE OF METER
- SWG RISERS MUST BE 3'-0" MIN. AWAY FROM ANY SOURCE OF IGNITION AND ANY COMBUSTION AIR OPENING
- SWG RISERS MUST BE 10'-0" FROM ANY AIR LINE OF AN EVAPORATIVE COOLER OR MECHANICAL AIR INTAKE
- GAS METER SHOULD NOT BE SET DIRECTLY UNDER ELECTRIC METERS OR WINDOWS, BUT CAN BE 1'-0" HORIZONTAL.
- FIELD COORDINATE EXACT LOCATION OF GAS METER WITH GAS COMPANY.

GAS PIPING SUPPORT

SUPPORT GAS PIPING AS REQUIRES PER I.R.C

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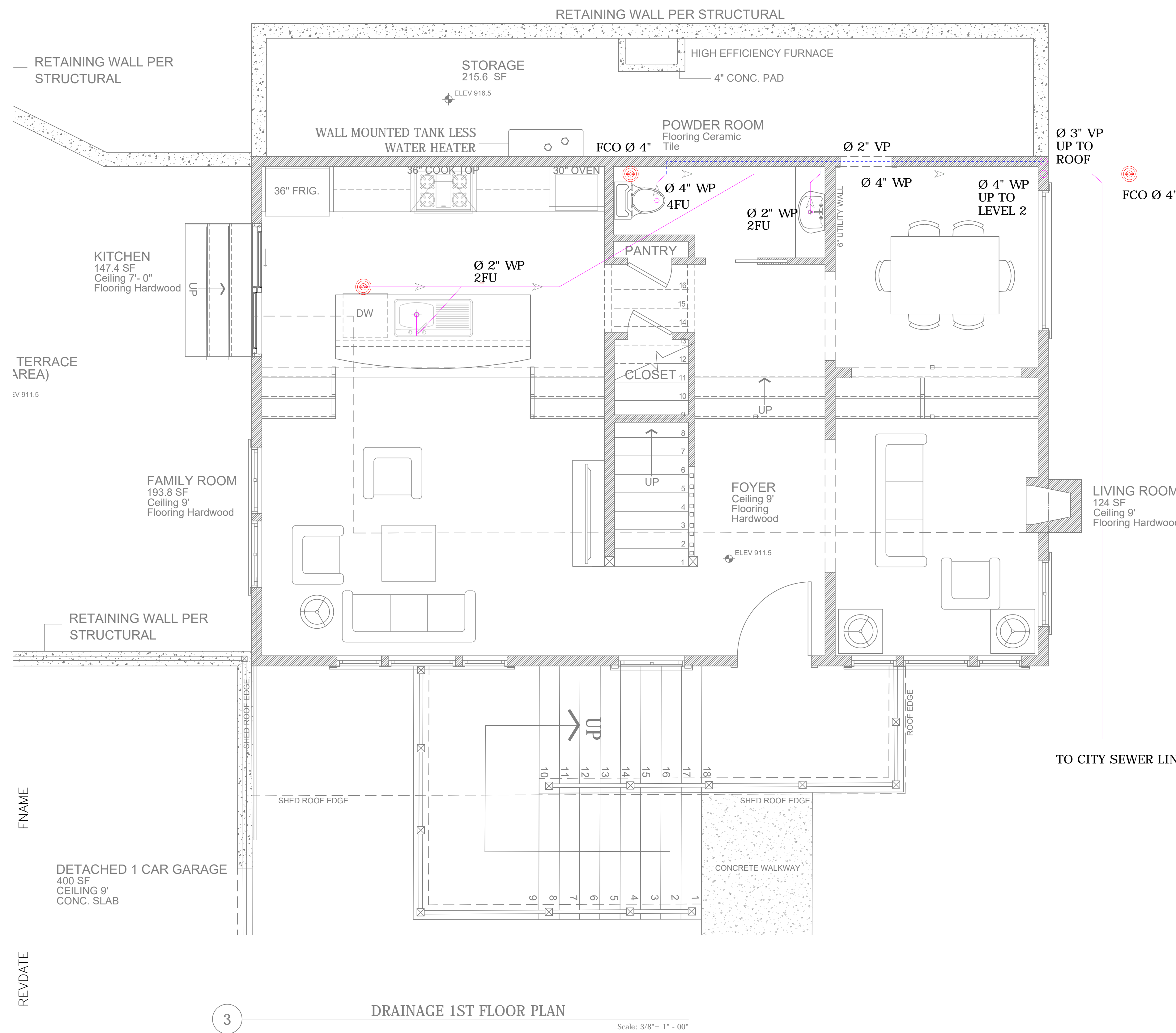
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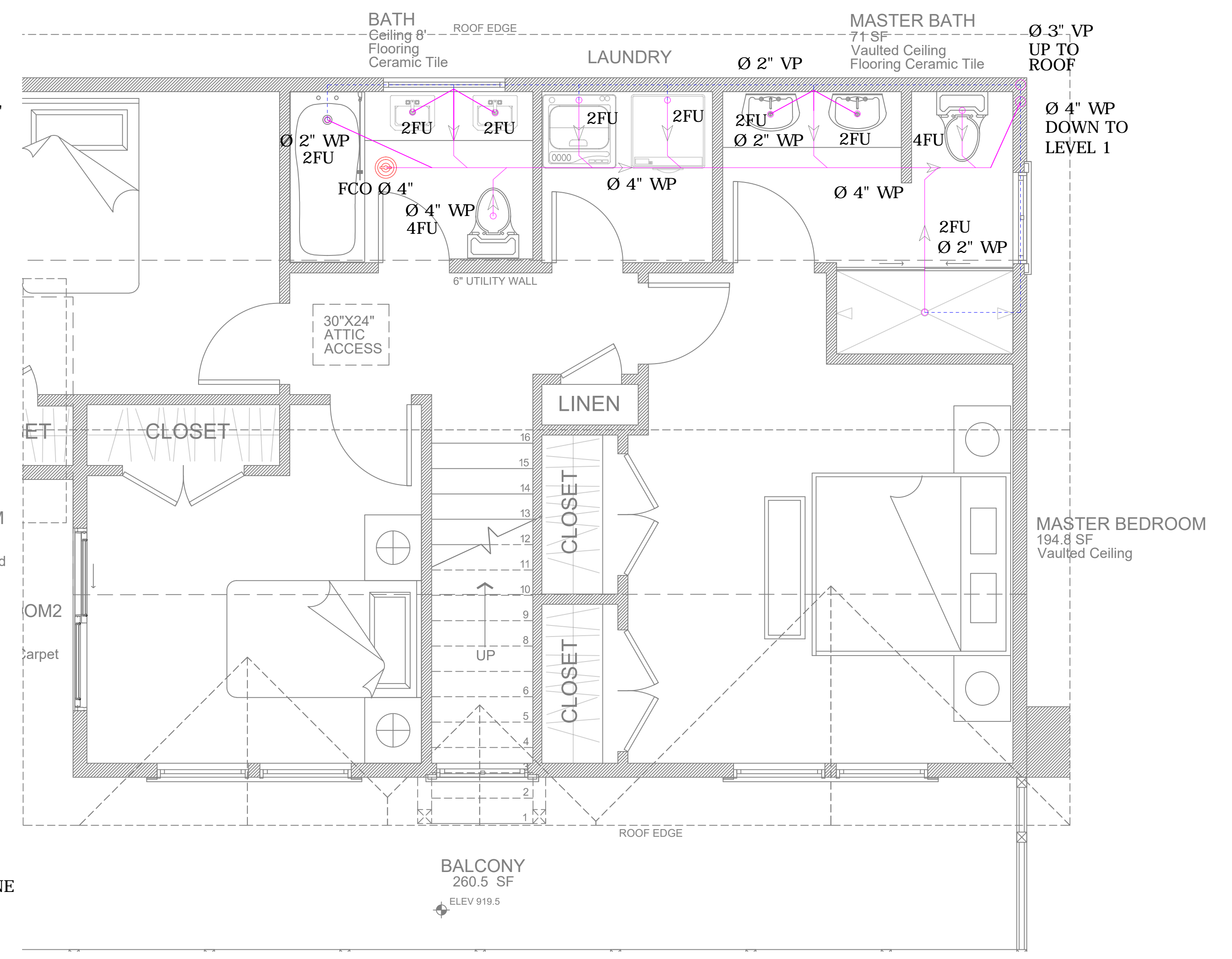
DRAWING TITLE: WATER SUPPLY AND GAS FOR 1ST AND 2ND FLOOR PLANS

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3 DRAINAGE 1ST FLOOR PLAN Scale: 3/8" = 1" - 00"



4 DRAINAGE 2ND FLOOR PLAN Scale: 3/8" = 1" - 00"

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PLUMBING / GENERAL NOTES

BATHTUBS AND WHIRLPOOL BATHTUBS. THE MAX. HOT WATER TEMPERATURE DISCHARGING SHALL BE LIMITED TO 120 DEGREES. CPC 414/2010

BATHTUBS WASTE OPENING IN FLOOR OVER CRAWL SPACES SHALL BE PROTECTED BY A METAL SCREEN NOT EXCEEDING 12" OR SOLID COVER. CPC 313.12.4 2010

SHOWERS AND TUB-SHOWERS COMBINATIONS IN ALL BUILDINGS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION OF BOTH THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION. VALVES SHALL BE ADJUSTED TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120 DEGREES FAHRENHEIT. THE WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION. 418.0 CPC/2010

VERIFY AND WHERE WATER PRESSURE EXCEEDS 80 PSI AN APPROVED PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED 608.2 CCC / 2010

1. INSTALL TEMPERATURE AND PRESSURE RELIEF VALVE WITH MINIMUM 3/4" DRAIN PIPE AND TERMINATE TO THE EXTERIOR OF THE BUILDING OVER WINDOW, DOOR OR VISIBLE LOCATION. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN SHALL BE PROHIBITED CPC 608.5, 510.8.

2. PROVIDE (ON THE PLANS) A GAS PIPING DIAGRAM OF THE GAS PIPING SYSTEM THAT INCLUDES ALL PIPE SIZES, PIPE LENGTHS AND BTU RATINGS.

3. SUBMIT GAS LOAD CALCULATIONS IN ACCORDANCE WITH CPC TABLE 12-8 TO VERIFY THE PIPE SIZES ARE ADEQUATE FOR THE MAXIMUM DELIVERY CAPACITY OF CUBIC FEET OF GAS PER HOUR.

4. A WHOLE HOUSE GAS TEST IS REQUIRED UPON COMPLETION OF THE INSTALLATION, ALTERATION, OR REPAIR OF ANY GAS PIPING. NOTE ON THE PLANS THE CITY OF PALO ALTO SHALL BE NOTIFIED WHEN GAS PIPING IS READY FOR INSPECTION.

MAX. 2 GPM SHOWER FIXTURE, MAX. 1.5 GPM BATHROOM FAUCET, MAX. 2 GPM KITCHEN FAUCET, AND MAX 1.28 WATER CLOSET TO CONFORM TO PALO ALTO GREEN REQUIREMENTS.

BATHROOMS: PROVIDE AN EXHAUST FAN DUCTED TO THE OUTSIDE (MINIMUM 4" DIAMETER FLEX DUCT WITH A MAXIMUM LENGTH OF 70') WITH A MINIMUM VENTILATION RATE OF 100 CFM.

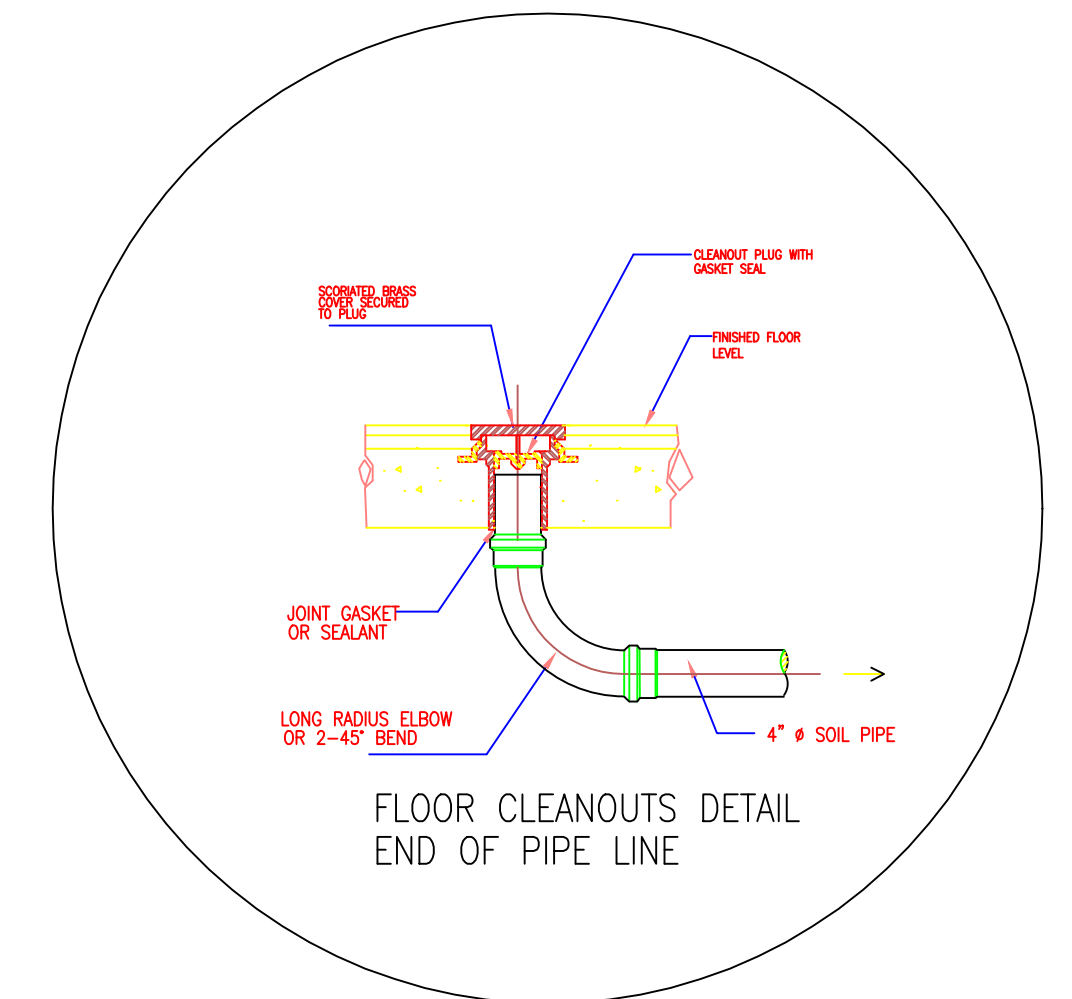
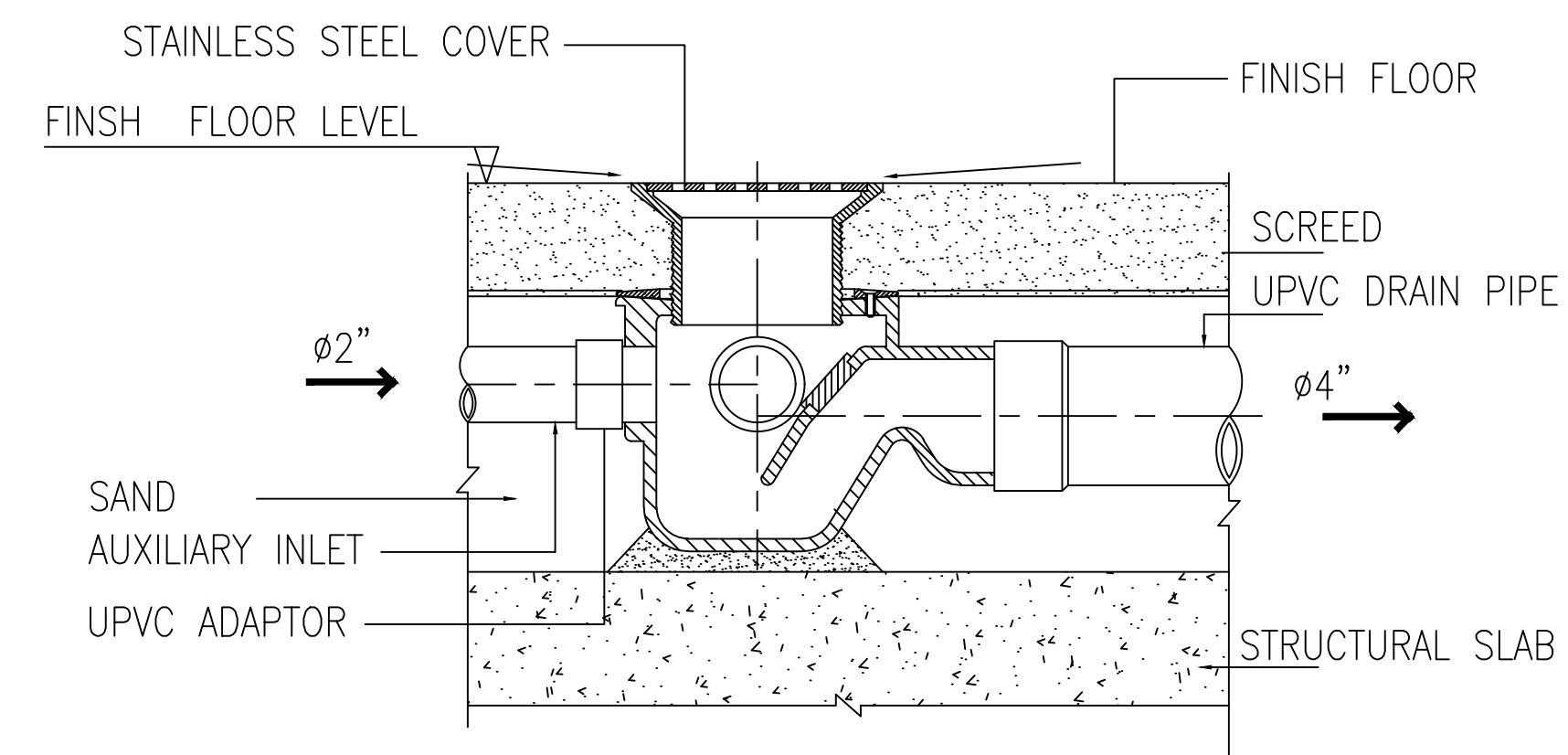
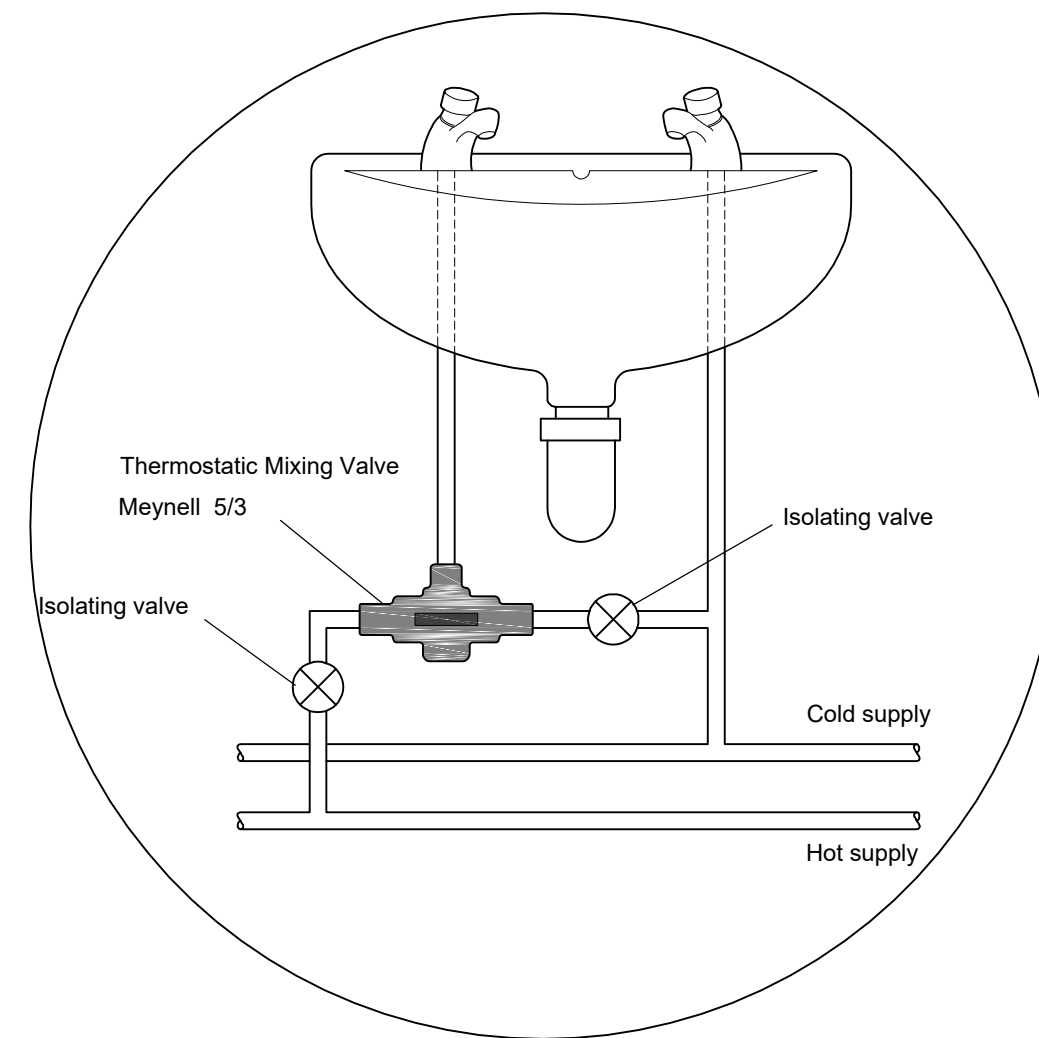
NOTE THAT ALL PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 6" ABOVE ROOF NOR LESS THAN 1' FROM ANY VERTICAL SURFACE. VENTS SHALL TERMINATE NOT LESS THAN 10' FROM OR 3' ABOVE ANY WINDOW, DOOR OPENING AIR INTAKE, OR VENT SHAFT NOR 3' FROM LOT LINE. (2010 CPC 906)

IF WATER PRESSURE EXCEEDS 80 PSI, AND EXPANSION TANK AND AN APPROVED PRESSURE REGULATOR SHALL BE INSTALLED. (2010 CPC 608.2)

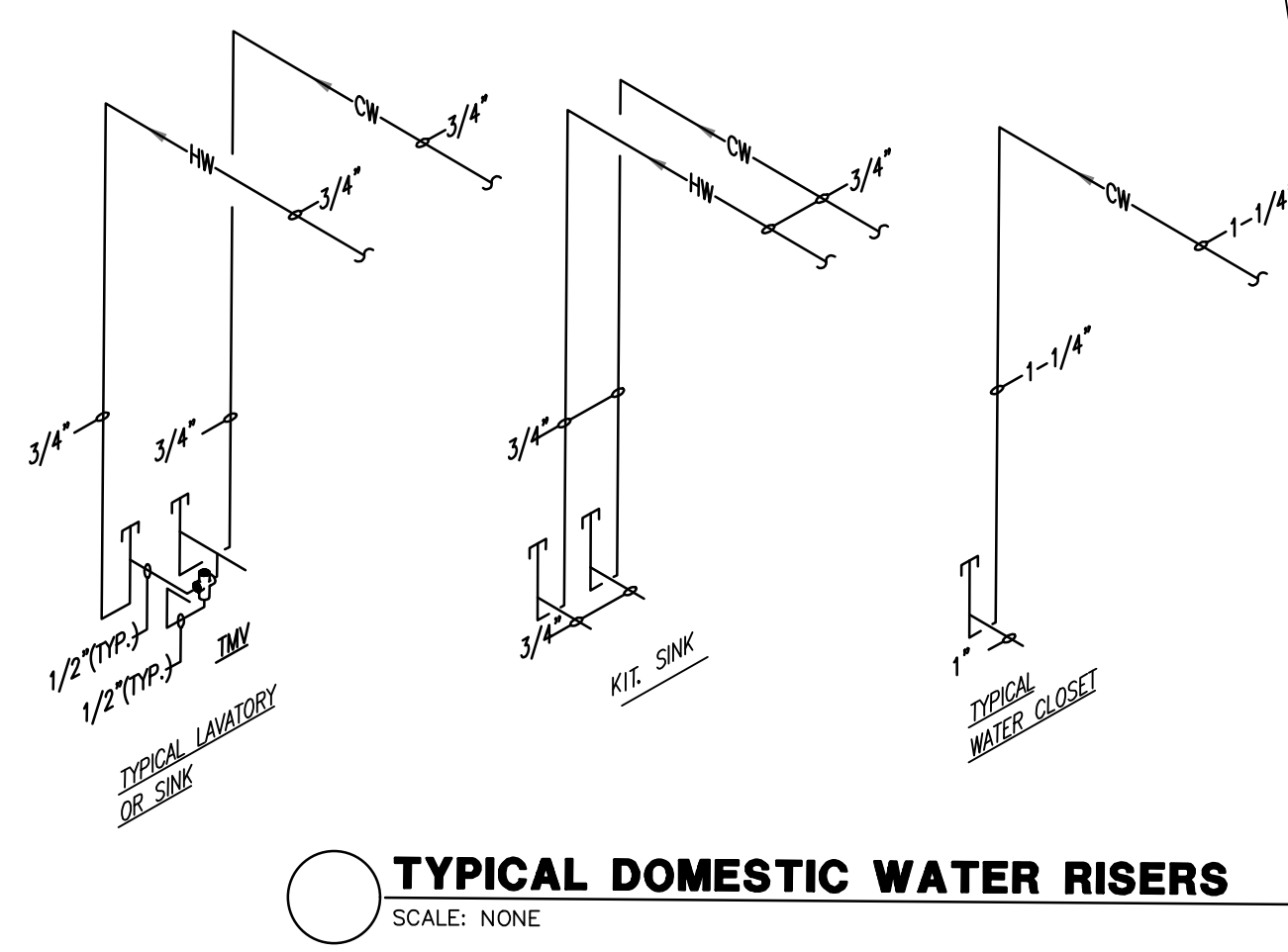
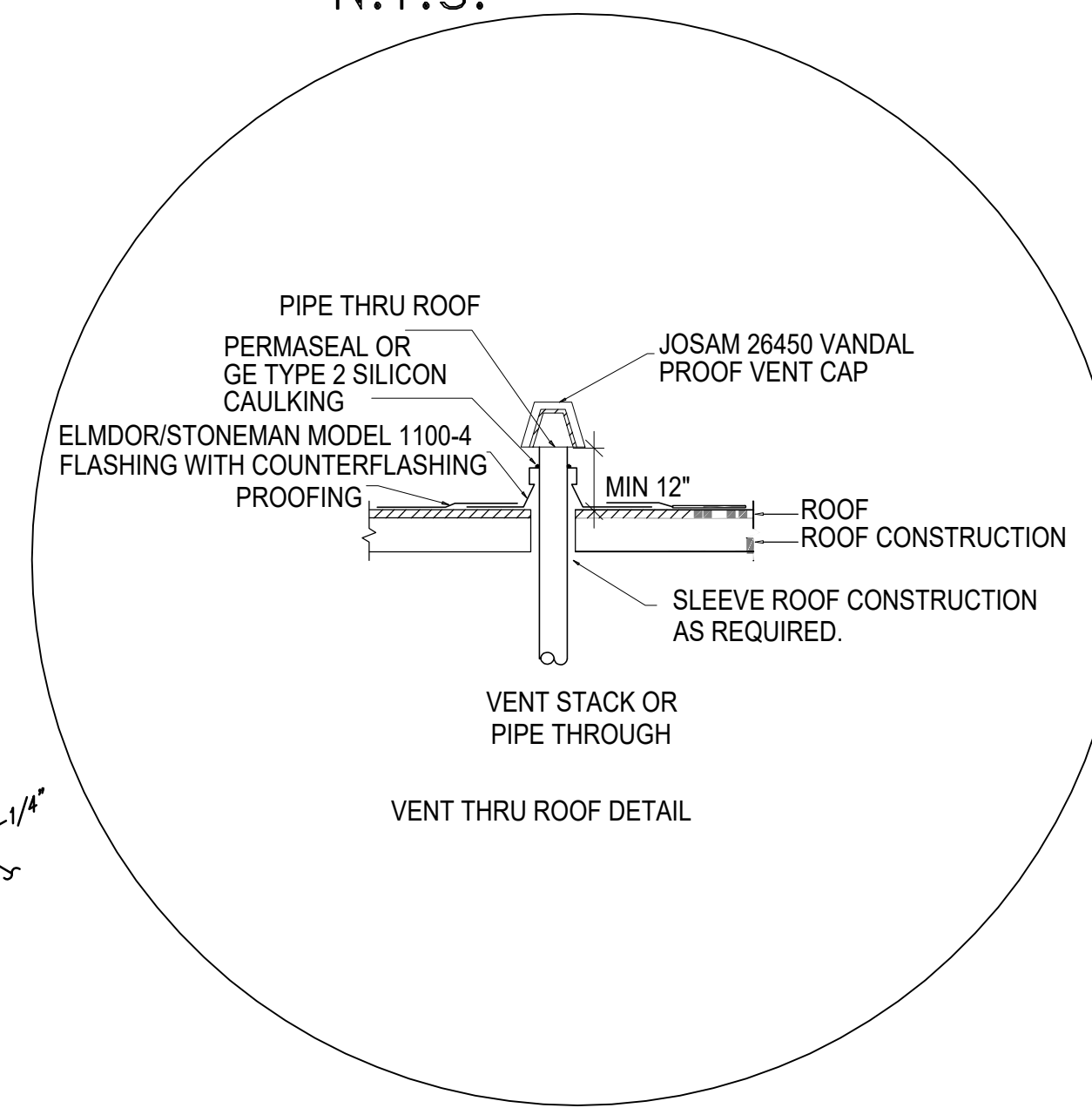
NON-REMOVABLE BACK FLOW PRE-VENTER OR BIBB-TYPE VACUUM BREAKER WILL BE INSTALLED ON ALL EXTERIOR HOSE BIBS. (2010 CPC 603.4.7)

HOT WATER RE-CIRCULATING SYSTEM IS INSTALLED, THE ENTIRE LENGTH OF HOT WATER PIPES SHALL BE INSULATED. (2008 CALIFORNIA ENERGY REGULATIONS 150 (J))

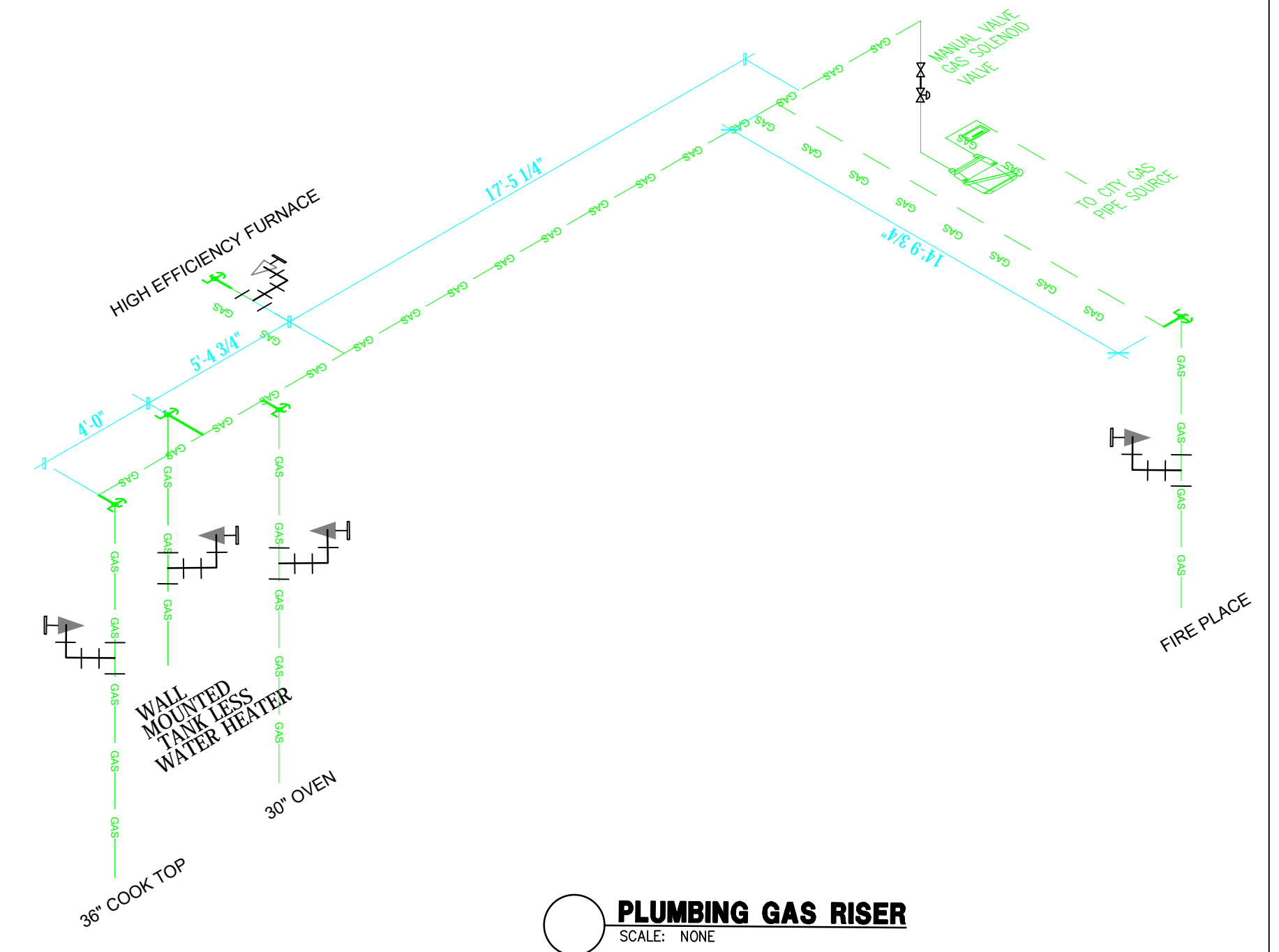
HOT WATER PIPE FROM THE WATER HEATER TO THE KITCHEN WILL BE INSULATED. (2008 CALIFORNIA ENERGY REGULATIONS 151(F)(8) D)



2 FLOOR DRAIN DETAIL
N.T.S.



TYPICAL DOMESTIC WATER RISERS
SCALE: NONE



PLUMBING GAS RISER
SCALE: NONE

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MECHANICAL SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING:
 - A. LATEST EDITION AND AMENDMENTS OF THE APPLICABLE STATE AND LOCAL CODES.
 - B. LATEST (OR APPLICABLE) EDITION OF INTERNATIONAL MECHANICAL CODE.
 - C. LATEST (OR APPLICABLE) EDITION OF NFPA CODE 90A.
2. FURNISH AND INSTALL ALL LABOR, MATERIAL, AND EQUIPMENT AND SERVICES NECESSARY FOR COMPLETE AND SAFE INSTALLATION OF THE MECHANICAL SYSTEM INDICATED ON THE DRAWINGS AND NOTED IN THE SPECIFICATIONS HEREINAFTER. MECHANICAL DRAWINGS ARE CONSIDERED DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND SYSTEMS. REFER TO ARCHITECTURAL DRAWINGS TO VERIFY LOCATION OF DEVICES, EQUIPMENT, ETC. CHECK DRAWINGS OF OTHER TRADES TO VERIFY EXACT SPACE CONDITIONS OF DUCTWORK AND EQUIPMENT. MATERIALS SHALL BE NEW, FREE FROM DEFECTS AND LISTED BY ARI OR UL WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH EXISTING CONDITIONS. CONTRACTOR SHALL VISIT SITE AND EXAMINE EXISTING CONDITIONS PRIOR TO BID.
3. SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO OWNER OR ARCHITECT FOR EACH PIECE OF EQUIPMENT TO INCLUDE RTU'S, ASSOCIATED PIPING, HEATERS, EQUIPMENT, DIFFUSERS, INSULATION, FANS, CONTROLS AND DUCTWORK. OBTAIN APPROVAL BEFORE EQUIPMENT IS ORDERED, BUILT, OR INSTALLED.

INSULATION:

1. INSULATE ALL CONCEALED SUPPLY DUCTWORK WITH 2" THICK FIBREGLASS DUCT WRAP WITH VAPOR BARRIER FACING. ALL INSULATION, FASTENERS AND ADHESIVES SHALL MEET NFPA 90A REQUIREMENTS AND UL FLAME SPREAD AND SMOKE DEVELOPED CRITERIA AND SHALL BEAR UL STAMP.

DUCTWORK:

1. R6 – R8 FLEX DUCTWORK: ALL DUCTWORK UNLESS OTHERWISE NOTED SHALL BE FABRICATED OF GALVANIZED SHEET STEEL IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA DUCT CONSTRUCTION STANDARDS FOR 2" PRESSURE CLASS. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
3. PROVIDE 1" THICK ACOUSTICAL DUCT LINING WITH AN AVERAGE DENSITY OF 1 1/2 LBS./CF. IN FIRST TEN FEET OF RETURN DUCT AND WHERE INDICATED. DUCT LINER SHALL HAVE FIRE RESISTANT INNER COATING TO PREVENT DELAMINATION OF FIBERS AND SHALL MEET NFPA AND UL REQUIREMENTS.

ACCESSORIES:

1. PROVIDE DUCTWORK ACCESSORIES IN ACCORDANCE WITH SMACNA STANDARDS. PROVIDE TURNING VANES IN ALL RECTANGULAR ELBOWS. WHERE SPACE PERMITS CONTRACTOR MAY PROVIDE RADIUS ELBOWS WITH A STANDARD CENTERLINE RADIUS EQUAL TO 1 1/2 TIMES THEIR WIDTH IN LIEU OF RECTANGULAR ELBOWS SHOWN ON PLANS. ALL RECTANGULAR DUCT TAPS SHALL BE MADE WITH 45 DEGREE ENTRY. ALL ROUND TAPS OVER 6" SHALL BE MADE WITH CONICAL TEES.
2. PROVIDE MANUAL VOLUME DAMPERS WHERE INDICATED AND AT ALL TAPS TO INDIVIDUAL DIFFUSERS.

AIR OUTLETS AND INLETS:

Titus 250
Steel curved blade ceiling and wall diffuser
Titus Model 250 presents a clean, functional, strong appearance, along with high performance. It is designed for ceiling, high side wall, and low side wall installations and is available in 1, 2, 3 or 4-way configurations.

FEATURES AND BENEFITS

Louvers are individually adjustable from the face of the diffuser
Wide selection of duct sizes to choose from
For use in ceiling or side wall applications

CONTROLS

1. PROVIDE PROGRAMMABLE WALL MOUNTED SPACE THERMOSTAT WITH SPACE MOUNTED REMOTE SENSOR
2. PROVIDE DUCT MOUNTED IONIZATION TYPE SMOKE DETECTOR IN RETURN AIR DUCT OF EACH RTU 2000 CFM AND ABOVE. DETECTOR SHALL SHUT DOWN UNIT UPON DETECTION OF PRODUCTS OF COMBUSTION AND ACTIVATE VISIBLE AND AUDIBLE ALARM AND TROUBLE SIGNAL IN AN APPROVED LOCATION.

TESTING ADJUSTING AND BALANCING:

1. AFTER COMPLETION OF THE INSTALLATION OF THE AIR CONDITIONING AND HEATING SYSTEMS AND PRIOR TO ACCEPTANCE BY THE OWNER, AIR HANDLING SYSTEM AND APPURTENANCES APPLICABLE TO THE ABOVE SYSTEM SHALL BE ADJUSTED AND BALANCED TO DELIVER THE AIR QUANTITIES AS SPECIFIED, INDICATED ON THE DRAWINGS, OR AS DIRECTED. BALANCING WORK SHALL BE DONE IN ACCORDANCE WITH AABC OR NEBB PUBLISHED METHODS AND PRACTICES. THE CONTRACTOR SHALL SUBMIT TO THE OWNER OR ENGINEER FOR THEIR EVALUATION AND APPROVAL, SIX (6) COPIES OF THE COMPLETE AIR BALANCE REPORT.

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MECHANICAL SPECIFICATIONS

SECTION 4.505 INTERIOR MOISTURE CONTROL

- 4.505.2 Concrete slab foundations. Concrete slab foundations required to have a vapor retarder by the California Building Code, Chapter 19 or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.
- 4.505.2.1 . A capillary break shall be installed in compliance with at least one of the following:)
1. A 4-inch-thick (101.6 mm) base of 1/2 inch (12.7 mm) or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
 2. Other equivalent methods approved by the enforcing agency.
 3. A slab design specified by a licensed design professional.
- 4.505.3 Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19-percent moisture content. Moisture content shall be verified in compliance with the following:
1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece to be verified.
 3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing. Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor recommendations prior to enclosure.

SECTION 4.506 INTERIOR AIR QUALITY AND EXHAUST

- 4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:
1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
 - a. Humidity controls shall be capable of adjustment between a relative humidity range of less than or equal to 50 to a maximum of 80. A humidity control may utilize manual or automatic means of adjustment.
 - b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e. built-in).
- Notes:
1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tubower combination.
 2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.

SECTION R337.6 VENTS

- R337.6.1 General. Where provided, ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Section 1203 of the California Building Code and Sections R337.6.1 through R337.6.3 of this section to resist building ignition from the intrusion of burning embers and flame through the ventilation opening.
- R337.6.2 Requirements. Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials, or other devices that meet one of the following requirements:
1. Listed vents complying with ASTM E2886 with the following test results:
 - 1.1. The Ember Intrusion Test shall have no flaming ignition of the cotton material.
 - 1.2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
 2. Vents complying with all of the following:
 - 2.1. The dimensions of the openings therein shall be a minimum of 1/16 inch (1.6 mm) and shall not exceed 1/8 inch (3.2 mm).
 - 2.2. The materials used shall be noncombustible.

Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.
 - 2.3. The materials used shall be corrosion resistant.
- R337.6.3 Ventilation openings on the underside of eaves and cornices. Vents shall not be installed on the underside of eaves and cornices.
- Exceptions:
1. Listed vents complying with ASTM E2886 with the following test results:
 - 1.1. The Ember Intrusion Test shall have no flaming ignition of the cotton material.
 - 1.2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
 2. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
 3. Vents complying with the requirements of Section R337.6.2 may be installed on the underside of eaves and cornices in accordance with either one of the following conditions:
 - 3.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the California Building Code or,
 - 3.2. The exterior wall covering and exposed underside of the eave are of noncombustible material, or ignition-resistant materials as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio, or similar surface.

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Project Name and Address:

PROPOSED NEW SINGLE-FAMILY RESIDENCE FOR
MR AND MRS. EVANS
 6173 VALLEY VIEW ROAD OAKLAND, CA 94010

Date: SEP.04.2018
 Scale:

DRAWING TITLE:
 MECHANICAL NOTES AND SPECIFICATIONS

Sheet :

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Page No. :

M002

No.	Revision/Issue	Date
1	DESIGN REVIEW	07.26.18
2	FOR PERMIT	09.07.18

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MECHANICAL LEGEND

	NEW DUCTWORK
	EXISTING DUCTWORK
	SOUNDLINED DUCTWORK
	DUCT RISING
	DUCT DROPPING
	DUCT SIZE, FIRST FIGURE IS VISIBLE SIDE
	CHANGE IN DUCT ELEVATION: RISE (R) OR DROP (D)
	DUCT WITH FLEXIBLE CONNECTION
	RECTANGULAR TO ROUND DUCT CONNECTION
	DUCT WITH CAPPED END
	TRANSITION
	DUCT SECTION, POSITIVE PRESSURE
	DUCT SECTION, NEGATIVE PRESSURE
	TURNING VANES (SQUARE ELBOW SHOWN)
	CONNECT NEW TAP TO EXISTING DUCTWORK
	MANUAL VOLUME DAMPER
	FLEXIBLE DUCT
	POINT OF CONNECTION - NEW TO EXISTING
	RETURN
	SUPPLY DIFFUSER
	THERMOSTAT
	REMOTE SPACE SENSOR
	GAS METER
AFF	ABOVE FINISHED FLOOR
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CD	CEILING DIFFUSER
CR	CEILING REGISTER
DN	DOWN
E, (E)	EXISTING, RELOCATE AS REQUIRED
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
FLR	FLOOR
N, (N)	NEW
TAD	TRANSFER AIR DUCT
UON	UNLESS OTHERWISE NOTED
VD	VOLUME DAMPER
G	NATURAL GAS
WH	WATER HEATER

MECHANICAL EQUIPMENT

RECTANGULAR DUCT SIZE ESTIMATE										
Design CFM	Duct Height --Net inside dimension in inches									
	4"	6"	8"	10"	12"	14"	16"	18"	20"	
60	6x4	60	4x6	90	4x8	120	4x10	150	4x12	
90	8x4	110	6x6	160	6x8	215	6x10	270	6x12	
120	10x4	160	8x6	230	8x8	310	8x10	400	8x12	
150	12x4	215	10x6	310	10x8	430	10x10	550	10x12	
180	14x4	270	12x6	400	12x8	550	12x10	680	12x12	
210	16x4	320	14x6	490	14x8	670	14x10	800	14x12	
240	18x4	375	16x6	580	16x8	800	16x10	950	16x12	
270	20x4	430	18x6	670	18x8	930	18x10	1100	18x12	
300	22x4	490	20x6	750	20x8	1060	20x10	1250	20x12	
330	24x4	540	22x6	840	22x8	1200	22x10	1400	22x12	
		600	24x6	930	24x8	1320	24x10	1600	24x12	
		650	26x6	1020	26x8	1430	26x10	1750	26x12	
		710	28x6	1100	28x8	1550	28x10	1950	28x12	
		775	30x6	1200	30x8	1670	30x10	2150	30x12	
40	21/2x10			1300	32x8	1800	32x10	2300	32x12	
70	21/2x14			1400	34x8	1930	34x10	2450	34x12	
150	21/2x30			1500	36x8	2060	36x10	2600	36x12	
		100	31/2x14			2200	38x10	2750	38x12	
		220	31/2x30			2350	40x10	2900	40x12	
									3050	42x12

Rectangular sheet metal duct = .07" on most metal duct calculators
 INSTRUCTIONS FOR USE
 Step One - Identify the volume of air that will be passing through the duct
 Step Two - Select the duct size from the table that can carry that air volume
 Step Three - If desired air flow exceeds the CFM rating increase to the next duct size
 Step Four - Listed CFM is based on typical field results and may vary in stall dampers
 Step Five - If duct run exceeds 25', or has excessive transitions increase to the next size
 Step Six - Design alone is inadequate always provide design by test and balance.

MECHANICAL EQUIPMENT			
AIR DIFFUSER SCHEDULE			
MARK	MANUF. MODEL	TYPE	REMARK
	TITUS TMSA-AA-24	SUPPLY AIR DIFFUSER	ALL ALUMINUM CONSTRUCTION WITH VERIFY COLOR FACTORY INSULATED BACKSIDE OF DIFFUSER
	TITUS 355FLF1-(VERIFY COLOR)	RETURN AIR GRILLE WITH FILTER	ALL ALUMINUM CONSTRUCTION WITH 1" THICK THROWAWAY FILTER FACTORY INSULATED BACKSIDE OF DIFFUSER
	TITUS 250	SUPPLY AIR DIFFUSER	ALL ALUMINUM CONSTRUCTION WITH VERIFY COLOR

FIELD DUCT SIZING CHART			
Flexible Duct		Round Metal Pipe	
Duct Size	Design Airflow	Duct Size	Design Airflow
5"	50	5"	50
6"	75	6"	85
7"	110	7"	125
8"	160	8"	180
9"	225	9"	240
10"	300	10"	325
12"	480	12"	525
14"	700	14"	750
16"	1000	16"	1200
18"	1300	18"	1500
20"	1700	20"	2000

GAS HEAT PUMP UNIT SCHEDULE

MANUFACTURER/ MODEL	COOLING				FAN		ENTERING CONDENSER (db)	AIR TEMP. EVAPORATOR (db/wb)	ELECTRICAL		WEIGHT (AS SPECIFIED)
	TOTAL (MBH)	SENSIBLE (MBH)	TONS	EFFICIENCY	CFM	E.S.P.			VOLTAGE/ PHASE	MCA/ MOCP	
Goodman Heat Pump System GMH80805CN	60,000	80,000	5	17	2300	1.0	105° F	80° F / 67° F	208/230-1	40	596 LBS

BATH EXHAUST FAN SCHEDULE

EQUIPMENT NO.	SERVICE	LOCATION	CFM	STATIC PRESS. (IN. W.G.)	MOTOR			MANUFACTURER & MODEL	NOTES
					HP	RPM	VOLT.-PH.-CY.		
EF-1	MENS/WOMENS RR	CEILING - SEE PLAN	75	0.25	F	950	120/1	GREENHECK SP-B90	1

- EXHAUST FAN WITH INTEGRATED LED LIGHT FIXTURE. PROVIDE WITH SPEED CONTROLLER AND BACKDRAFT DAMPER.
- DUCT TO EXTERIOR, PROVIDE NEW WALL CAP.

AIR-CONDITIONING LEGEND

	EXHAUST AIR DUCT		EXHAUST CEILING DIFFUSER
	SUPPLY DUCT		EXHAUST FAN ROOF TYPE
	RETURN DUCT		RETURN CEILING DIFFUSER
	SUPPLY CEILING DIFFUSER		

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Date: SEP. 04, 2018
 Scale:

DRAWING TITLE: MECHANICAL SCHEDULES

Sheet :

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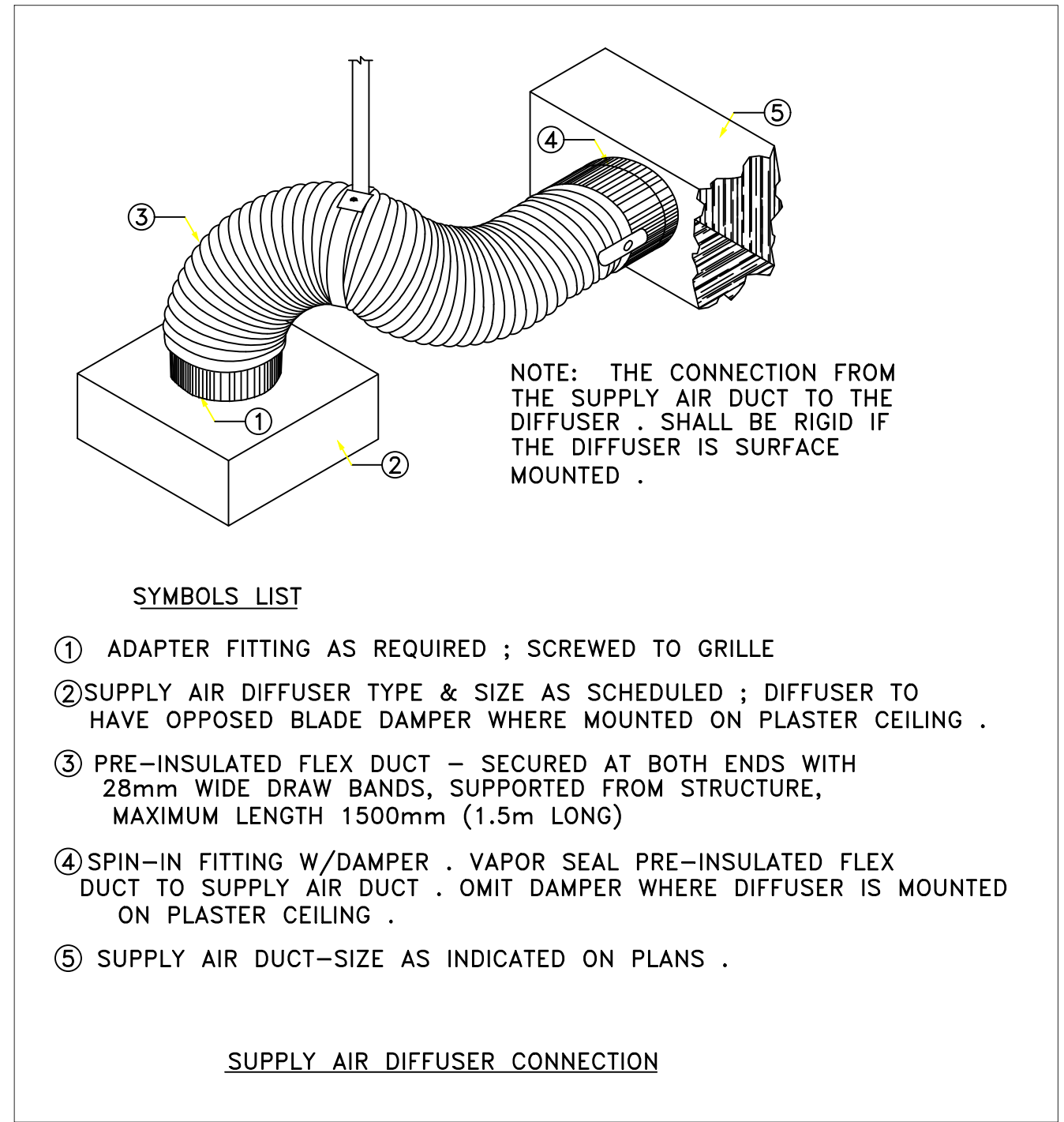
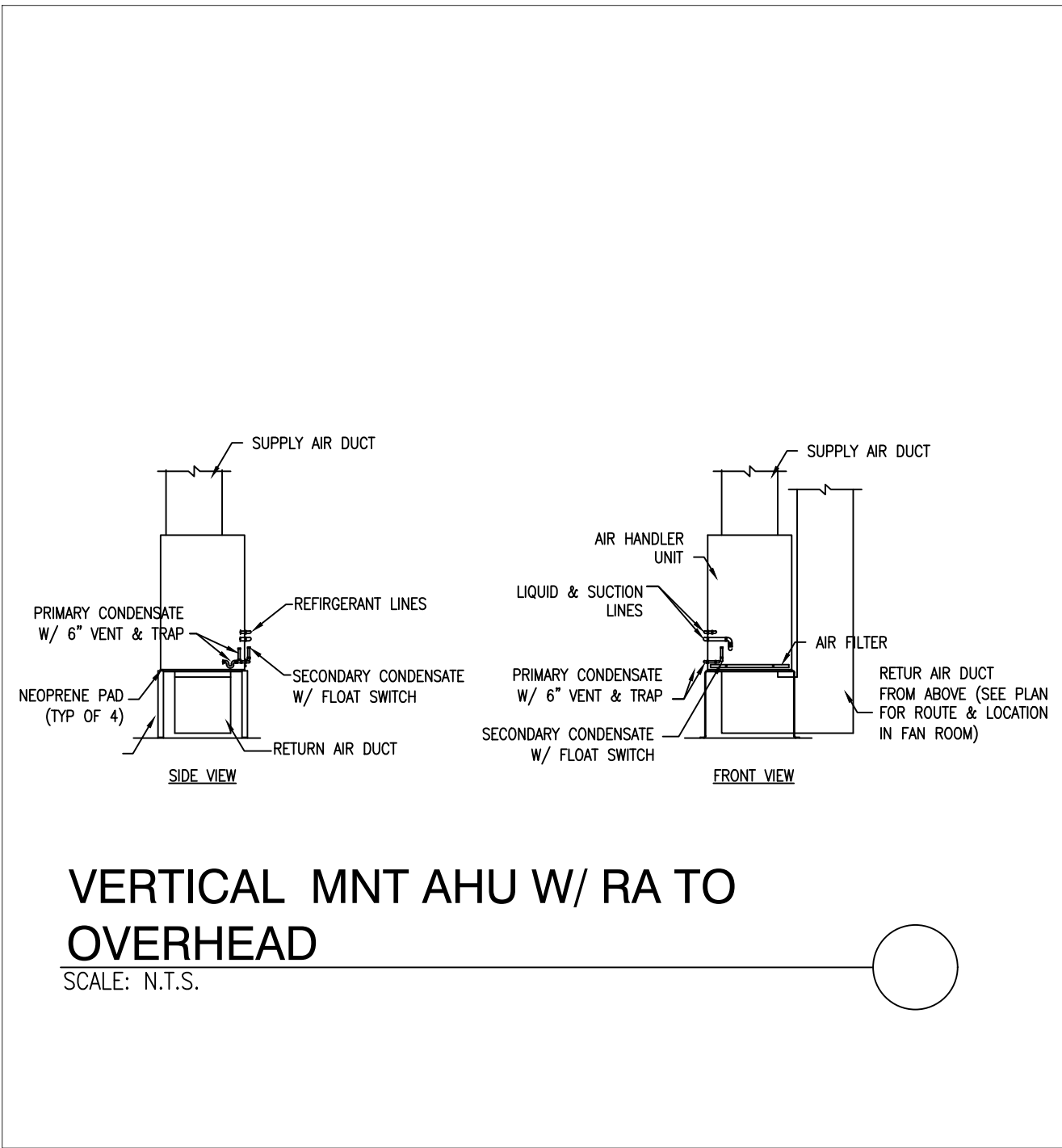
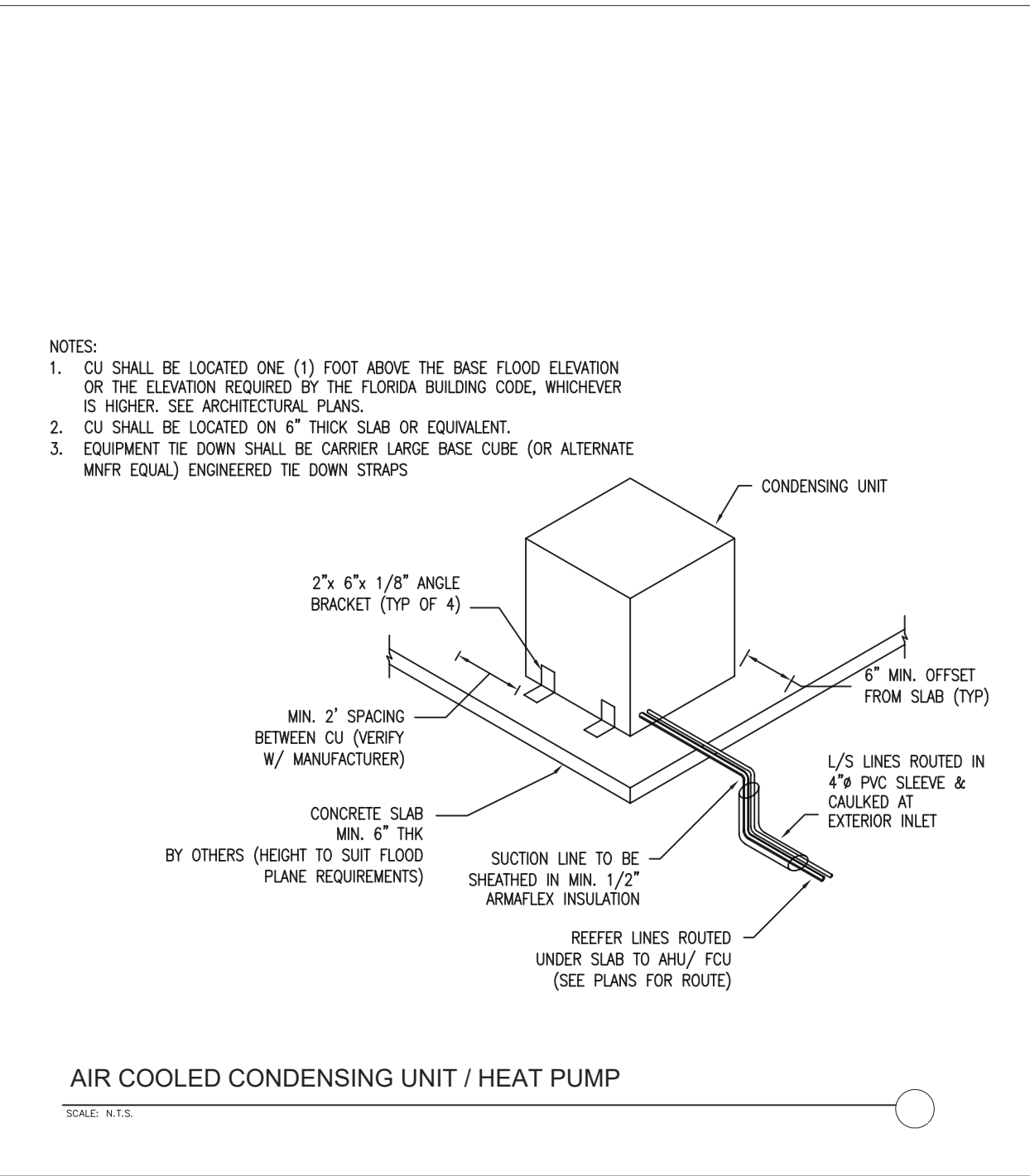
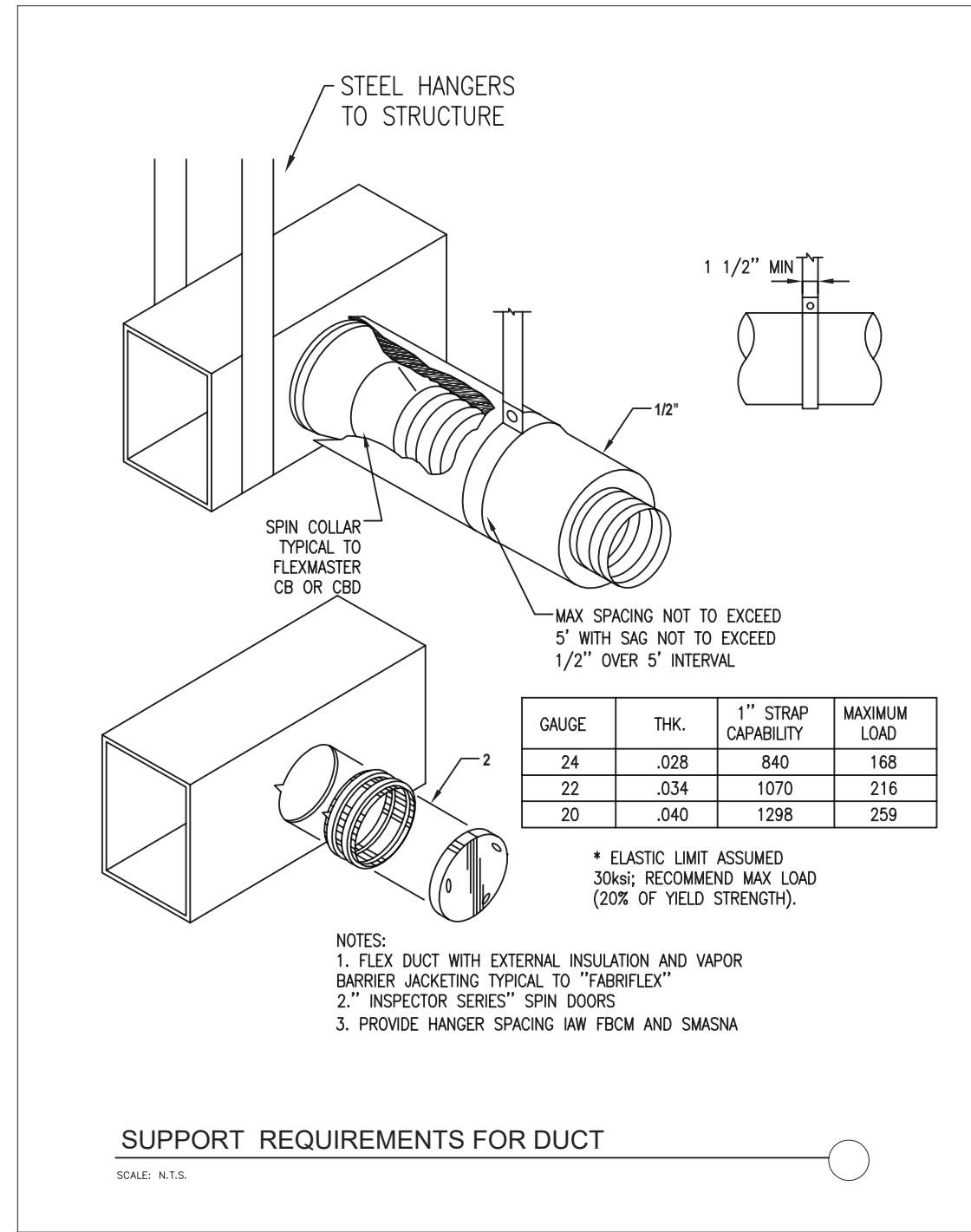
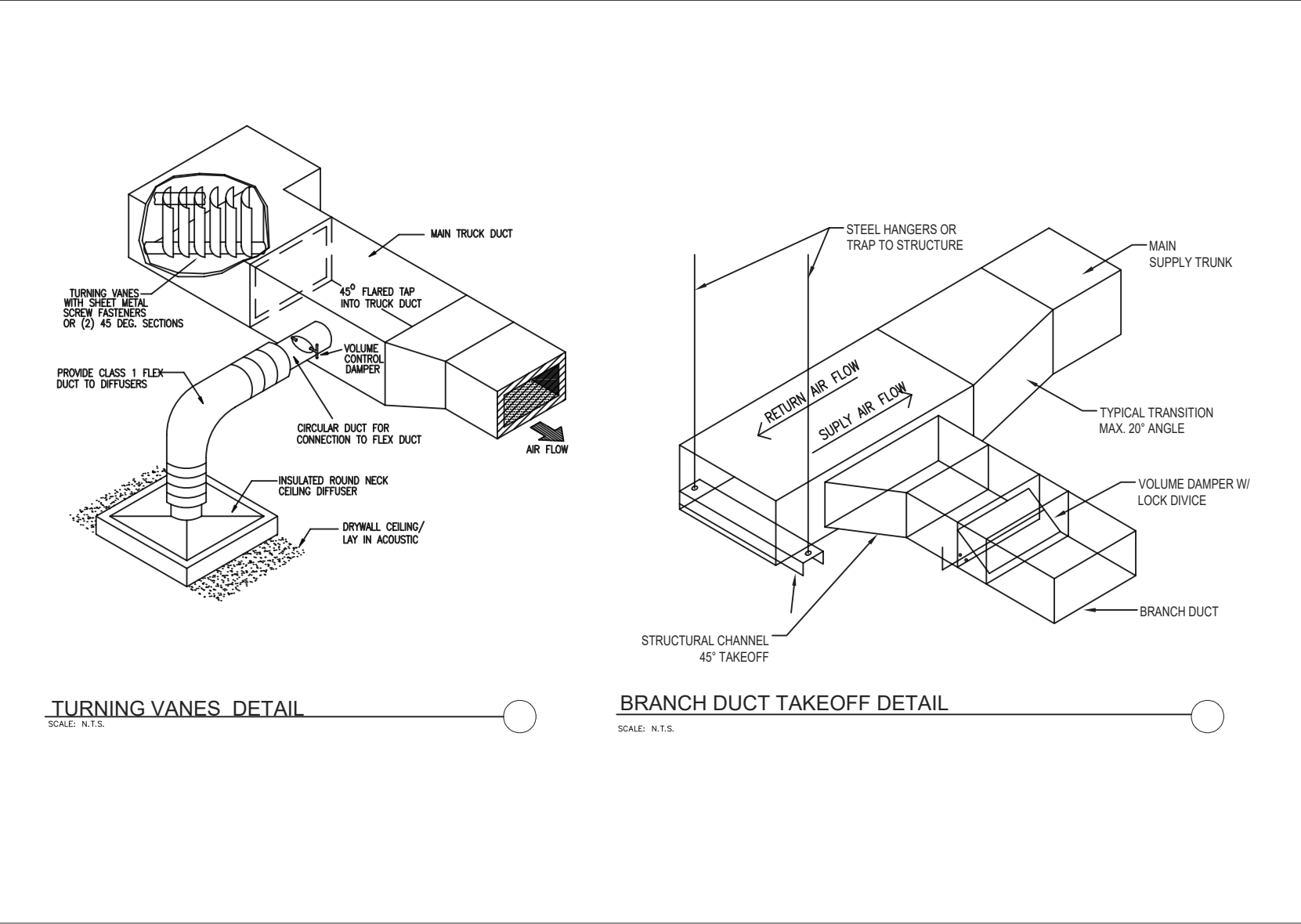
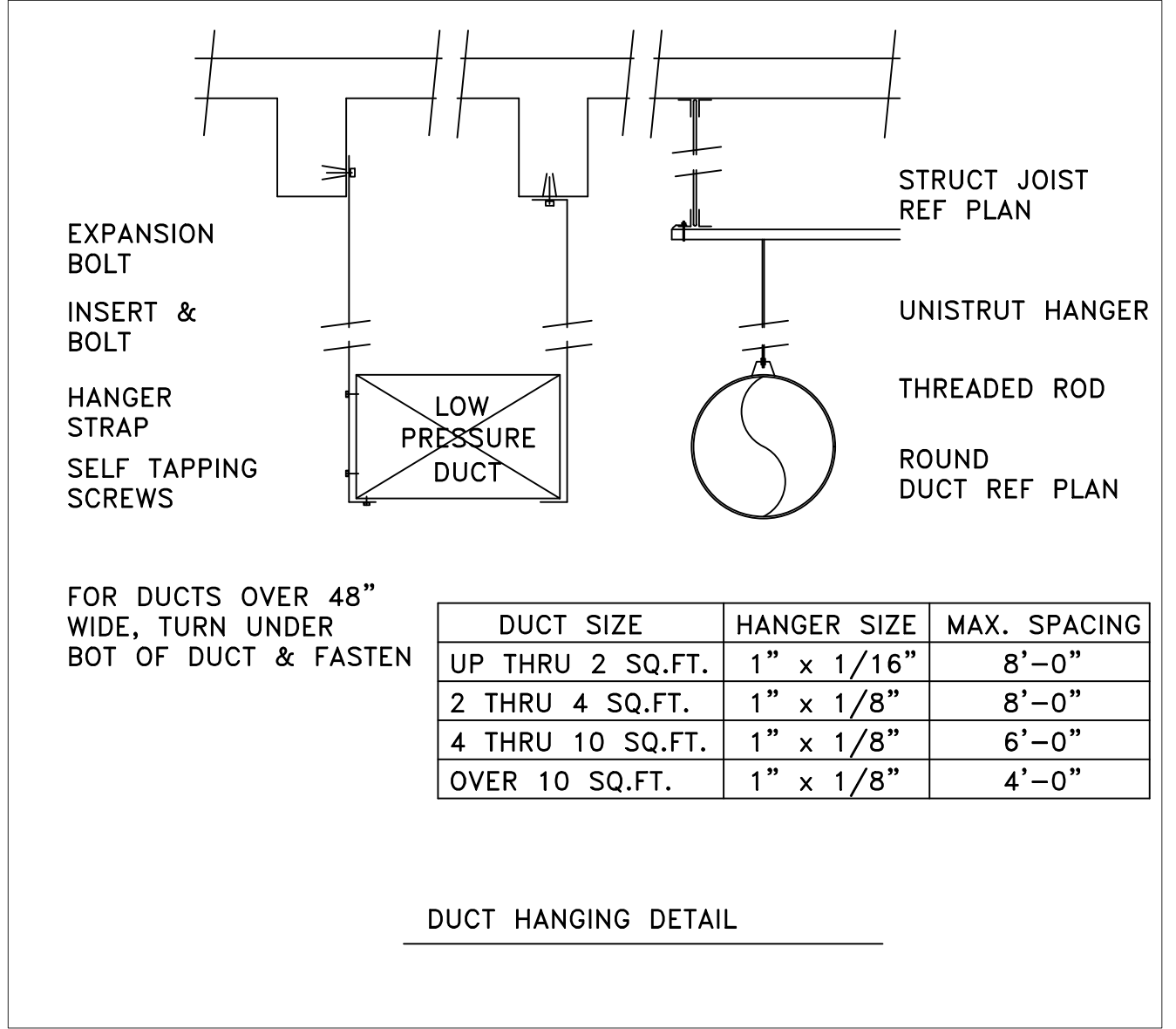
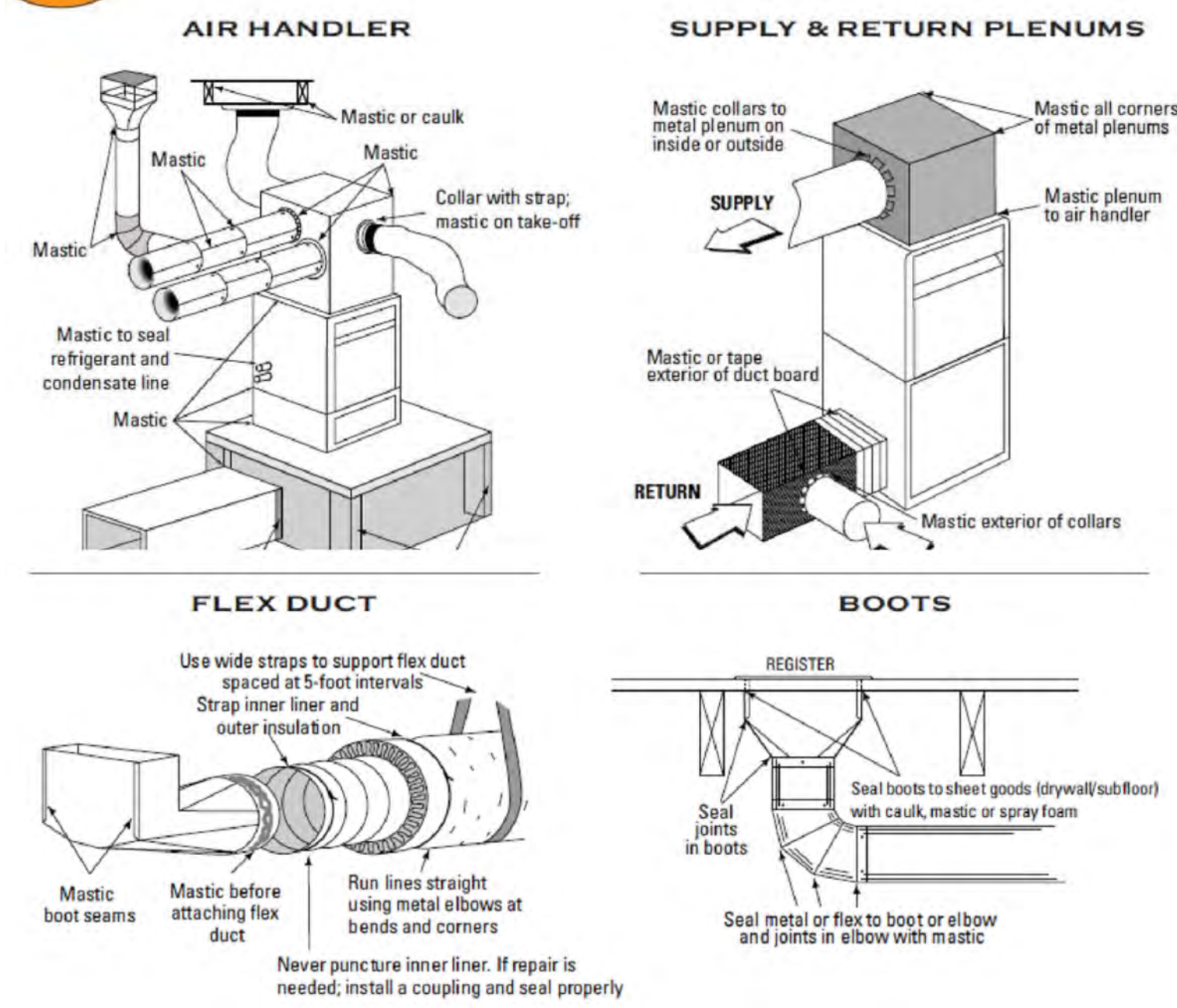
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M101

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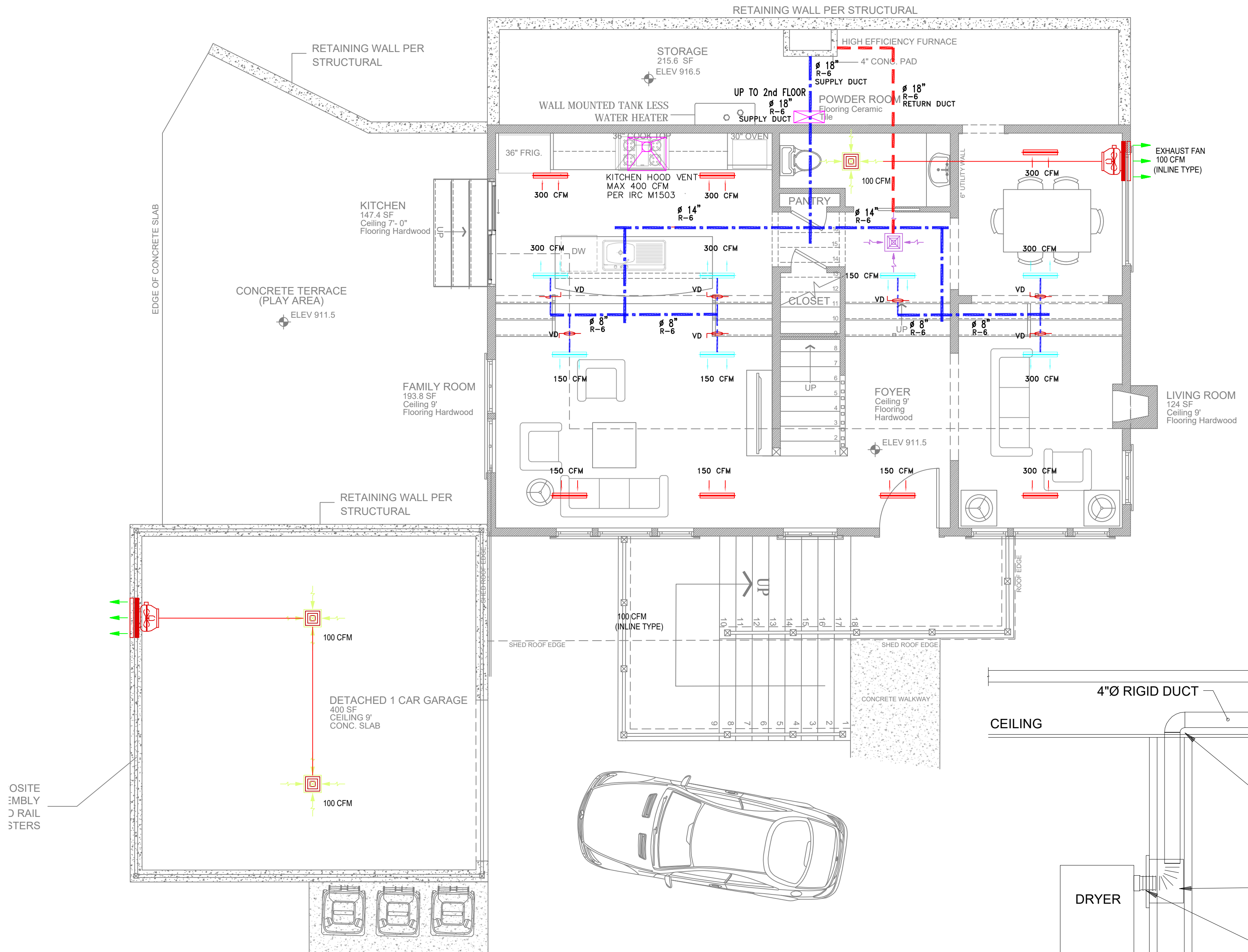
MECHANICAL DETAILS(N.T.S.)



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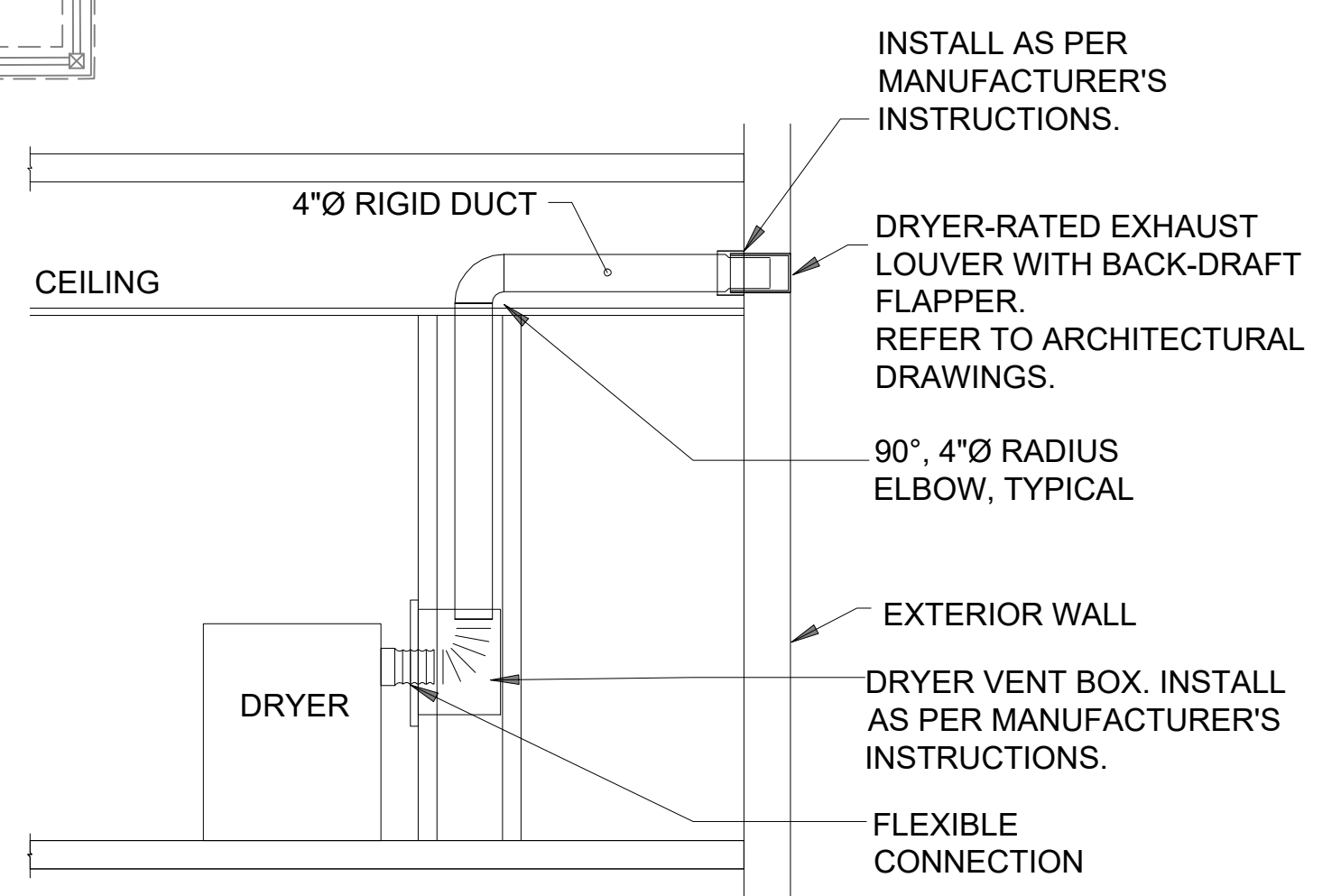
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2 HVAC 1ST FLOOR PLAN Scale: 3/8" = 1" - 00"

GARAGE VENTILATION

SPACE	NUMB OF VEHICLES	VENT RATE (CFM PER VEHICLE)	MIN. O/A RATE (CFM)	VENT TYPE (MECH/NAT)	MECH EXH FAN CFM	MIN NUMB OF VENT BLOCKS
3 CAR GARAGE	2	100	200	MECH	200	-



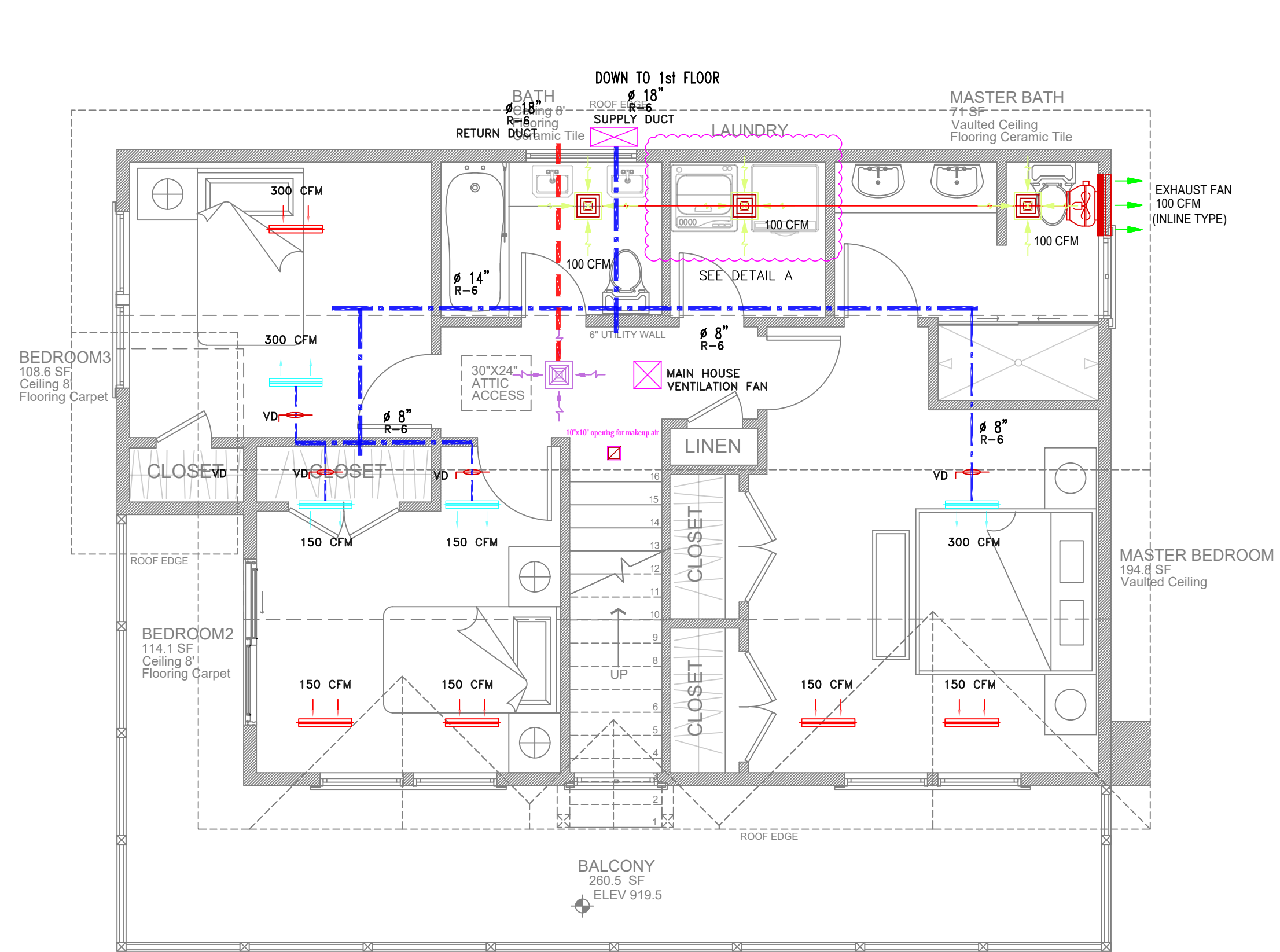
NOTES:

1. ALL DRYER EXHAUST DUCT JOINTS SHALL OVER LAP IN THE DIRECTION OF AIR FLOW.
2. NO SCREWS SHALL BE ALLOWED IN THE DRYER EXHAUST DUCT AND ALL JOINTS SHALL BE SEALED WITH FOIL FACED TAPE.
3. DRYER EXHAUST SYSTEM IS DESIGNED BASED ON A WASHER/DRYER AS MANUFACTURED BY GE MODEL GFDN120ED. CONTRACTOR SHALL USE SHEET METAL ROUND DUCTWORK AND MINIMIZE THE USE OF FLEXIBLE DUCTWORK.

MAXIMUM LENGTH OF 4 INCH DIAMETER RIGID METAL DUCT:

No. OF ELBOW FEET	
0	90
1	60
2	45
3	35
4	25

DRYER EXHAUST DETAIL "A"
NOT TO SCALE



3 HVAC 2ND FLOOR PLAN Scale: 3/8" = 1" - 00"

NOTES.

- 1 Supply ducts in the attics shall be insulated to a minimum of R8. All other ducts shall be insulated to a minimum of R6
- 2 2009 IRC N1103.2.1 Ducts and 2009 IECC 403.2.1 Insulation Ducts completely inside conditioned space do not require insulation. "Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6. Exception: Ducts or portions thereof located completely inside the building thermal envelope."
- 3 Exhaust fans Kitchen, bath, etc. exhaust fans shall be rated at 3.0 sones or less.
- 4 All new glazing (fenestration's) will be installed with a certifying label attached, showing the U-value.
- 5 During construction all ducts and other air distribution equipment shall be covered with tape, plastic, sheet metal, or other methods to reduce the amount of dust or debris which may collect in the system
- 6 The bathroom fan shall be controlled by a humidistat, be Energy Star rated, and vented directly to the outside

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Date: SEP. 04, 2018
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 HVAC FOR 1ST AND 2ND FLOOR PLANS

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M103

No.	Revision/Issue	Date
1	DESIGN REVIEW	07.26.18
2	FOR PERMIT	09.07.18

Air System Sizing Summary for Default System			09/01/2018 10:21PM
Project Name: CA-6173 VALLEY VIEW ROAD OAKLAND, CA 94610 Prepared by: Hatem			
Air System Information Air System Name: Default System Equipment Class: TERM Air System Type: WSHP		Number of zones: 1 Floor Area: 1112.3 ft ² Location: Oakland AP, California	
Sizing Calculation Information Calculation Months: Jan to Dec Sizing Data: Calculated Zone CFM Sizing: Sum of space airflow rates Space CFM Sizing: Individual peak space loads			

Hourly Analysis Program v4.90 Page 1 of 6

Zone Sizing Summary for Default System			09/01/2018 10:21PM				
Project Name: CA-6173 VALLEY VIEW ROAD OAKLAND, CA 94610 Prepared by: Hatem							
Air System Information Air System Name: Default System Equipment Class: TERM Air System Type: WSHP		Number of zones: 1 Floor Area: 1112.3 ft ² Location: Oakland AP, California					
Sizing Calculation Information Calculation Months: Jan to Dec Sizing Data: Calculated Zone CFM Sizing: Sum of space airflow rates Space CFM Sizing: Individual peak space loads							
Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft ²)	Zone CFM/ft ²
Zone 1	49.8	2792	2792	Aug 1600	44.1	1112.3	2.51
Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB / WB @ 10.0 °F (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load	
Zone 1	48.7	48.7	78.7 / 83.7	60.6 / 57.9	-	Aug 1600	
Zone Name	Heating Coil Load (MBH)	Heating Coil EntLvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (KW)	OA Vent Airflow (CFM)
Zone 1	49.8	67.5 / 84.0	2792	0.000	0.000	0.000	152
Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft ²)	Space CFM/ft ²
Zone 1							
BEDROOM (2)	1	7.2	Sep 1500	394	5.5	131.5	3.00
BEDROOM (3)	1	5.5	Jul 1700	299	4.3	108.6	2.70
LAUNDRY	1	1.6	Aug 1500	89	2.0	32.5	2.70
MASTER BEDROOM	1	6.4	Sep 1500	349	6.7	206.0	1.69
DINING ROOM	1	6.8	Sep 1500	369	4.4	83.7	4.40
FAMILY ROOM	1	6.9	Jul 1700	378	6.0	172.0	2.20
FOYER	1	3.5	Jul 1900	192	4.3	91.0	2.11
KITCHEN	1	6.3	Jul 1700	341	5.7	172.0	1.99
LIVING ROOM	1	7.0	Sep 1500	381	5.1	116.0	3.31

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Air System Design Load Summary for Default System			09/01/2018 10:21PM			
Project Name: CA-6173 VALLEY VIEW ROAD OAKLAND, CA 94610 Prepared by: Hatem						
		DESIGN COOLING		DESIGN HEATING		
		COOLING DATA AT Aug 1600		HEATING DATA AT DES WTS		
		COOLING OA DB / WB	84.4 °F / 63.8 °F	HEATING OA DB / WB	34.0 °F / 28.7 °F	
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Sensible (BTU/hr)	Latent (BTU/hr)	
Window & Skylight Solar Loads	300 ft ²	1674	-	300 ft ²	-	
Wall Transmission	3242 ft ²	14482	-	3242 ft ²	28312	
Roof Transmission	1144 ft ²	3317	-	1144 ft ²	4964	
Window Transmission	300 ft ²	1135	-	300 ft ²	6350	
Skylight Transmission	0 ft ²	0	-	0 ft ²	0	
Door Loads	0 ft ²	0	-	0 ft ²	0	
Floor Transmission	634 ft ²	0	-	634 ft ²	0	
Partitions	0 ft ²	0	-	0 ft ²	0	
Ceiling	0 ft ²	0	-	0 ft ²	0	
Overhead Lighting	1112 W	3776	-	0	0	
Task Lighting	0 W	0	-	0	0	
Electric Equipment	1112 W	3787	-	0	0	
People	17	3886	2040	0	0	
Infiltration	-	849	-712	-	6488	
Miscellaneous	-	0	0	-	0	
Safety Factor	0% / 0%	0	0	0%	0	
>> Total Zone Loads		49807	1328	-	44112	
Zone Conditioning		47411	1328	-	43949	
Plenum Wall Load	0%	0	-	0	0	
Plenum Roof Load	0%	0	-	0	0	
Plenum Lighting Load	0%	0	-	0	0	
Exhaust Fan Load	0 CFM	0	-	0 CFM	0	
Ventilation Load	152 CFM	1333	-1295	152 CFM	5805	
Ventilation Fan Load	0 CFM	0	-	0 CFM	0	
Space Fan Coil Fans	-	0	-	-	0	
Duct Heat Gain / Loss	0%	0	-	0%	0	
>> Total System Loads		48743	33	-	48754	
Terminal Unit Cooling	-	48743	0	-	0	
Terminal Unit Heating	-	0	-	-	48754	
>> Total Conditioning		48743	0	-	48754	
Key:	Positive values are cog loads		Positive values are htg loads		Negative values are cog loads	
		Negative values are htg loads		Negative values are cog loads		

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System Psychrometrics for Default System			09/01/2018 10:21PM				
Project Name: CA-6173 VALLEY VIEW ROAD OAKLAND, CA 94610 Prepared by: Hatem							
August DESIGN COOLING DAY, 1600							
TABLE 1: SYSTEM DATA							
Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.4	0.00791	152	400	1333	-1295
Vent - Return Mixing	Outlet	0.0	0.00000	0	0	-	-
Ventilation Fan	Outlet	0.0	0.00000	0	0	0	0
Zone Air	-	76.3	0.00971	2792	67	47411	1328
Return Plenum	Outlet	0.0	0.00971	2792	67	0	0
Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.080 BTU/(hr-CFM-F) Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4745.7 BTU/(hr-CFM) Site Altitude = 5.0 ft							
TABLE 2: ZONE DATA							
Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Zone 1 (Cooling)	-	-	-	152	-	-	-
Ventilation Air	-	-	-	152	-	-	-
Cooling Coil Inlet	-	76.7	0.00961	2792	0	-	-
Cooling Coil Outlet	-	60.6	0.00961	2792	0	48743	0
Heating Coil Inlet	-	60.6	0.00961	2792	0	-	-
Heating Coil Outlet	-	60.6	0.00961	2792	0	0	-
Zone Air	-	76.3	0.00971	2792	0	47411	-

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System Psychrometrics for Default System			09/01/2018 10:21PM				
Project Name: CA-6173 VALLEY VIEW ROAD OAKLAND, CA 94610 Prepared by: Hatem							
WINTER DESIGN HEATING							
TABLE 1: SYSTEM DATA							
Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	34.0	0.00205	152	400	-5805	0
Vent - Return Mixing	Outlet	0.0	0.00000	0	0	-	-
Ventilation Fan	Outlet	0.0	0.00000	0	0	0	0
Zone Air	-	69.4	0.00205	2792	0	-43949	0
Return Plenum	Outlet	0.0	0.00205	2792	0	0	0
Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.080 BTU/(hr-CFM-F) Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4745.7 BTU/(hr-CFM) Site Altitude = 5.0 ft							
TABLE 2: ZONE DATA							
Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Zone 1 (Heating)	-	-	-	152	-	-	-
Ventilation Air	-	-	-	152	-	-	-
Cooling Coil Inlet	-	67.5	0.00206	2792	0	-	-
Cooling Coil Outlet	-	67.5	0.00206	2792	0	0	0
Heating Coil Inlet	-	67.5	0.00206	2792	0	-	-
Heating Coil Outlet	-	64.0	0.00206	2792	0	48754	-
Zone Air	-	69.4	0.00205	2792	0	-43949	-

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 AIR SYSTEM SIZING SUMMARY FOR DEFAULT SYSTEM

No.	Revision/Issue	Date
38 of 46	DESIGN REVIEW	07.26.18
	FOR PERMIT	09.07.18

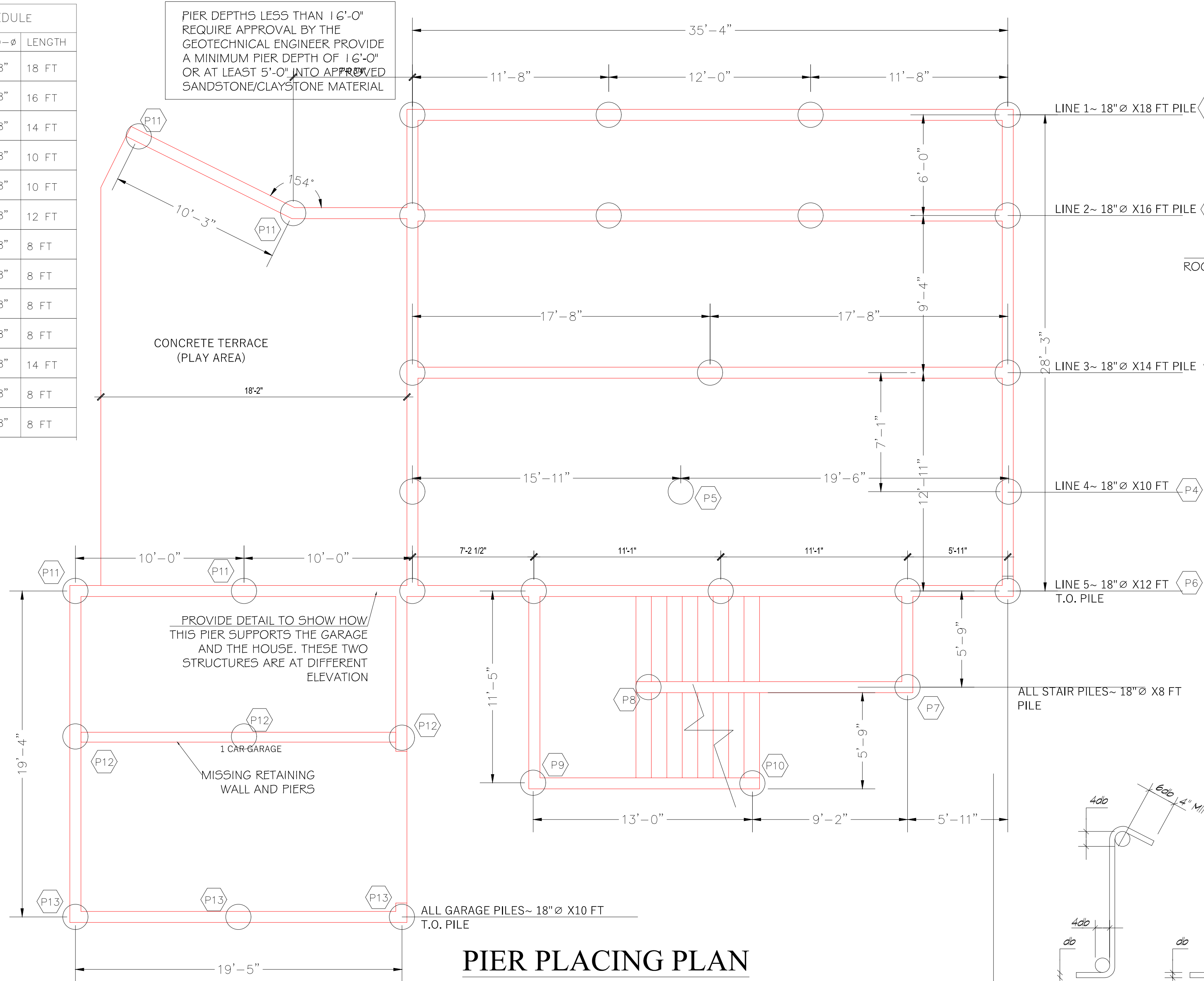
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PIER SCHEDULE				
NO.	TOP EL.	TIP EL.	D-Ø	LENGTH
P1	916.25	898.25	18"	18 FT
P2	912.25	896.25	18"	16 FT
P3	910.25	896.25	18"	14 FT
P4	910.25	900.25	18"	10 FT
P5	910.25	900.25	18"	10 FT
P6	907.9	895.9	18"	12 FT
P7	908.4	902.4	18"	8 FT
P8	903.3	895.3	18"	8 FT
P9	903.3	895.3	18"	8 FT
P10	898.3	890.3	18"	8 FT
P11	906.75	892.75	18"	14 FT
P12	900.75	892.75	18"	8 FT
P13	900.75	892.75	18"	8 FT

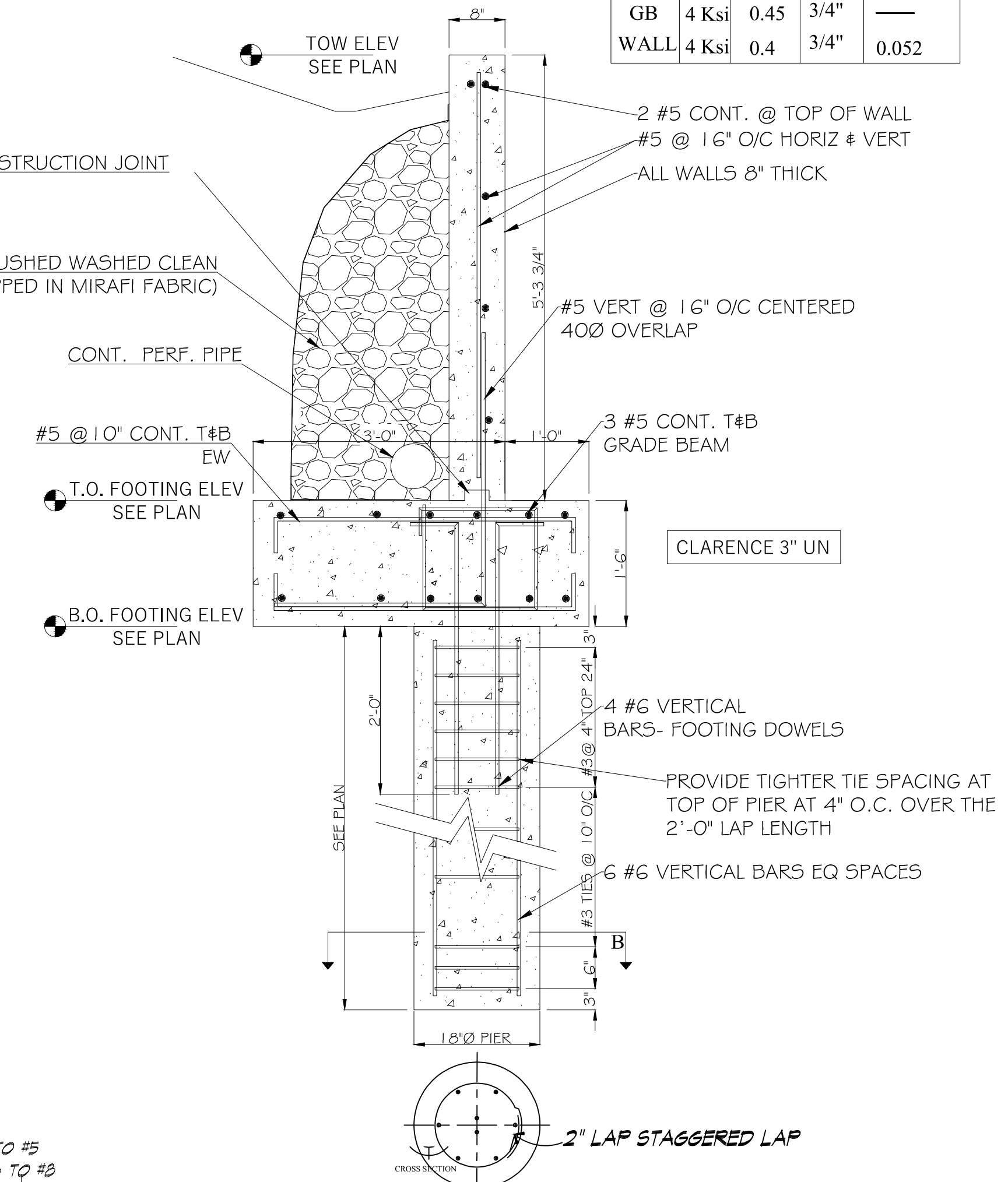
PIER DEPTHS LESS THAN 16'-0" REQUIRE APPROVAL BY THE GEOTECHNICAL ENGINEER PROVIDE A MINIMUM PIER DEPTH OF 16'-0" OR AT LEAST 5'-0" INTO APPROVED SANDSTONE/CLAYSTONE MATERIAL



PIER PLACING PLAN

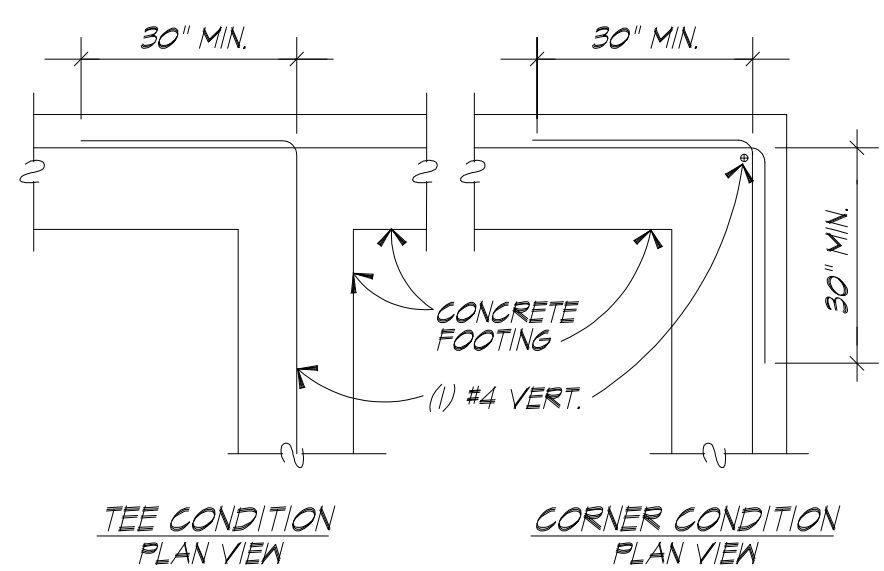
SCALE 1/4" = 1.0 FT

CONCRETE STRENGTH				
	FC	w/c	MAX	MAX
	28d	RATIO	AGG	SHRINK
			SIZE	AGE
PIER	3 Ksi	0.5	1/2"	—
GB	4 Ksi	0.45	3/4"	—
WALL	4 Ksi	0.4	3/4"	0.052



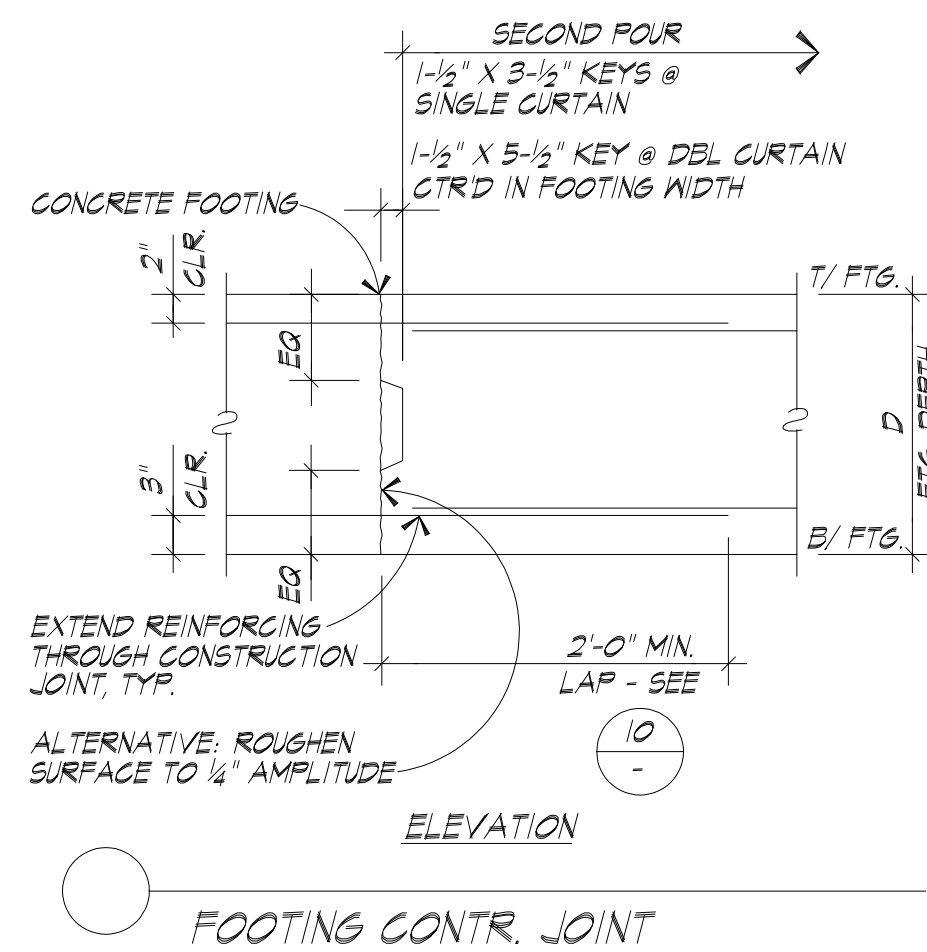
PIER ELEVATION

SCALE 1/4" = 1.0 FT

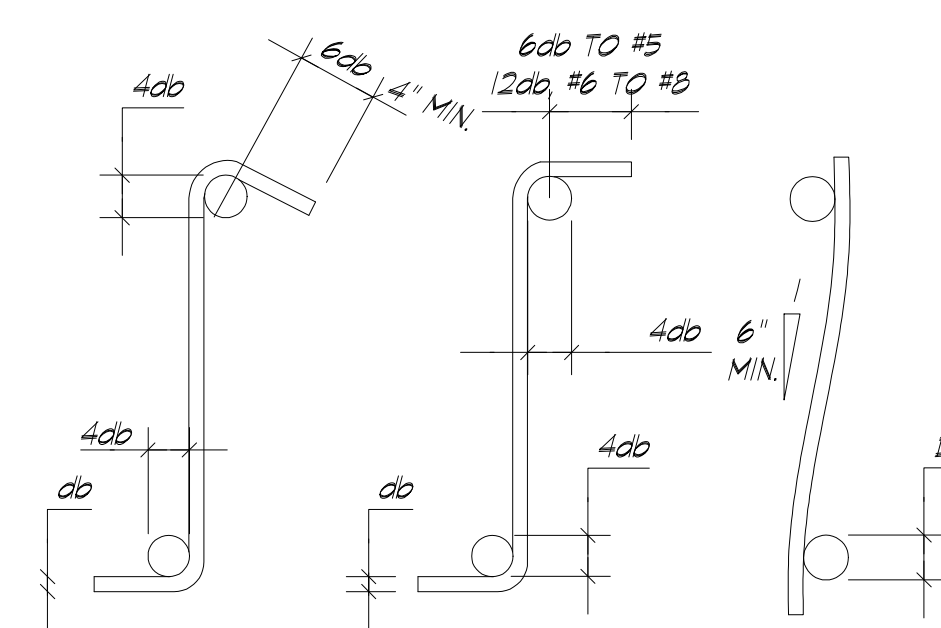


- NOTES:
- db = BAR DIAMETER
 - PLACE ALL BENDS HORIZONTALLY.

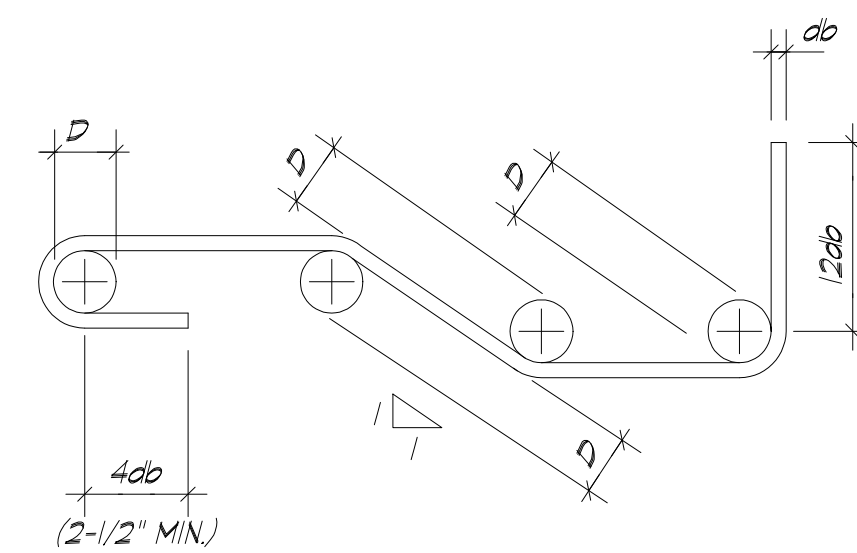
STANDARD REINF. LAPS
SINGLE ROW OF REINFORCEMENT



FOOTING CONTR. JOINT



STIRRUPS AND TIES OFFSET



STANDARD REINFORCEMENT

- NOTES:
- db = NOMINAL BAR DIAMETER
 - FINISHED INSIDE BEND DIAMETER 'D',
6db FOR #5 THRU #8
8db FOR #9 THRU #11

STANDARD BAR BENDS

CROSS SECTION

2" LAP STAGGERED LAP

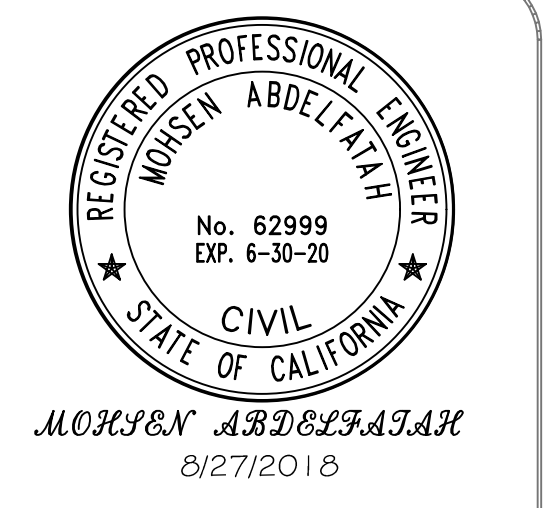
BAR SIZE	SPLICE LENGTH
#3	2'-0"
#4	2'-0"
#5	2'-6"
#6	3'-0"
#7	4'-1"
#8	4'-8"
#9	5'-9"
#10	7'-4"
#11	9'-0"

- NOTES:
- SPLICE LENGTHS ARE TYPICAL UNLESS OTHERWISE SHOWN OR NOTED ON PLANS AND DETAILS.
 - SPLICES SHALL BE STAGGERED WHERE POSSIBLE AND BARS SHALL BE LAPPED ONLY WHERE INDICATED ON DRAWINGS OR AS SPECIFICALLY PERMITTED BY THE ENGINEER.
 - VERTICAL WALL REINFORCING SHALL LAP A MINIMUM OF 48 DIAMETERS AT HORIZONTAL CONSTRUCTION JOINTS.

TYP. REBAR LAP SPLICE IN CONG.

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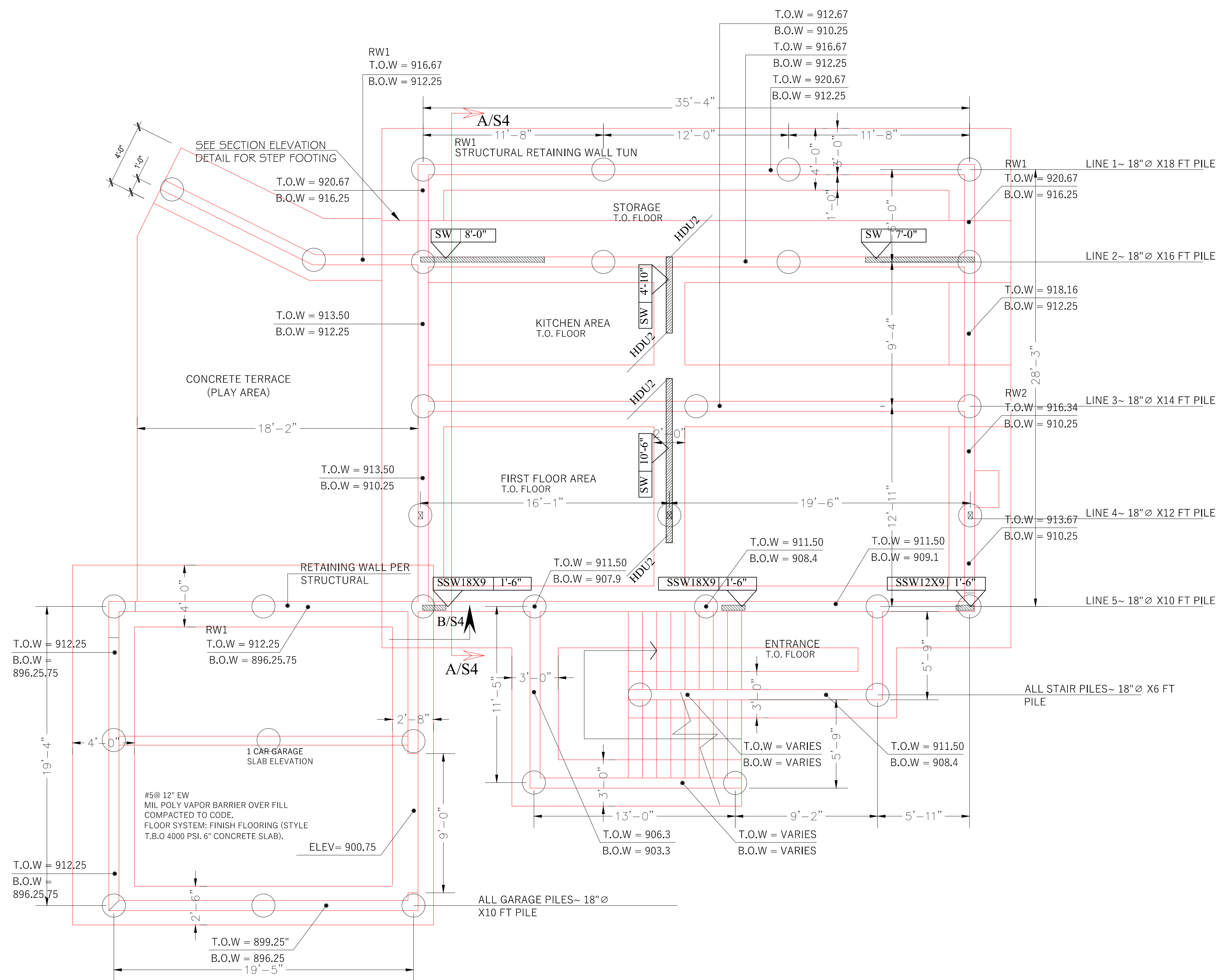
PROJECT
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PILE PLACEMENT PLAN



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NO.	DATE	BY

SCALE DATE
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S-1



RETAINING WALL PLAN

SCALE 1/4" = 1.0 FT

FOUNDATION AND FRAMING NOTES

1. Provide full depth blocking for floor joists at all new supports and under wall perpendicular to floor joists. Provide double joists at bearing walls parallel to floor joists. Provide double joists or solid blocking under plumbing walls, cabinet fronts, major appliances, kitchen islands, bathroom fixtures, and fireplace hearths.
2. Solid block through floor framing at all new post load locations down to foundation.
3. Double floor joists around all floor openings which require cutting through joists.
4. All foundation plates, sleepers on concrete slabs and sills which rest on concrete, shall be pressure treated Douglas Fir marked and approved by the appropriate lumber grading agency.
5. Provide minimum 26 gauge galvanized sheet metal termite shield between untreated wood framing and concrete or grade.
6. Provide and install framing hardware as indicated and as appropriate. Hardware and connectors by Simpson Strong-Tie Co. or approved equal.
7. See Sheet SD1 for additional structural notes.
8. All anchor bolts shall be secured with 1/4" X 3" square washers.
9. Refer to manufacturer's specs for cutting, drilling and notching manufactured beams.
10. Under floor foundation vents shall not be located in shearwalls, except under windows.
11. Contractor shall deepen and/or widen grade beams as required to accommodate installation of holdown anchors (to maintain 3" clearance).
12. Posts shall have depths to match the wall studs in which they are constructed and widths to match the beams they support, typ.
13. Where new concrete is placed against existing hardened concrete, the interface surface of the existing concrete shall be roughened to 1/4" amplitude.
14. Vapor retarders shall meet requirements for Class B vapor retarders per ASTM E1745 and be installed per ASTM E1643.

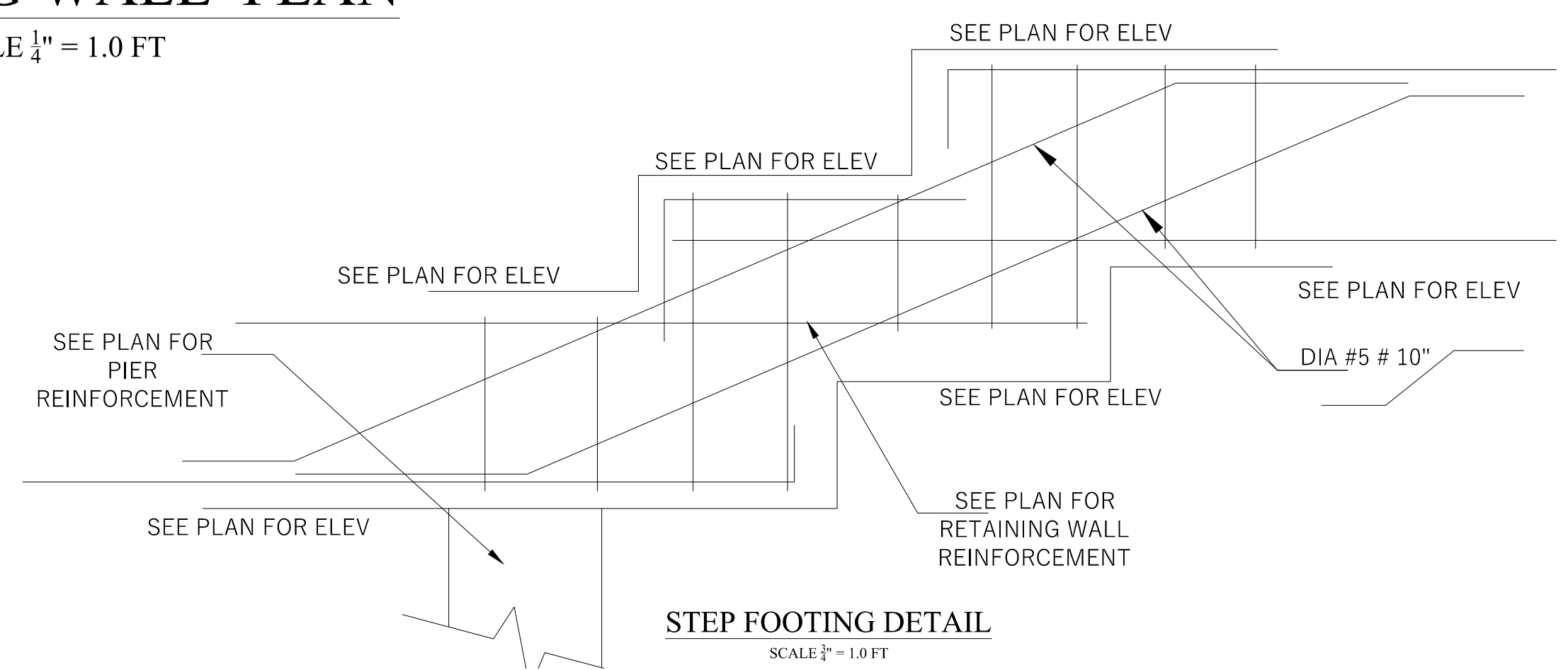
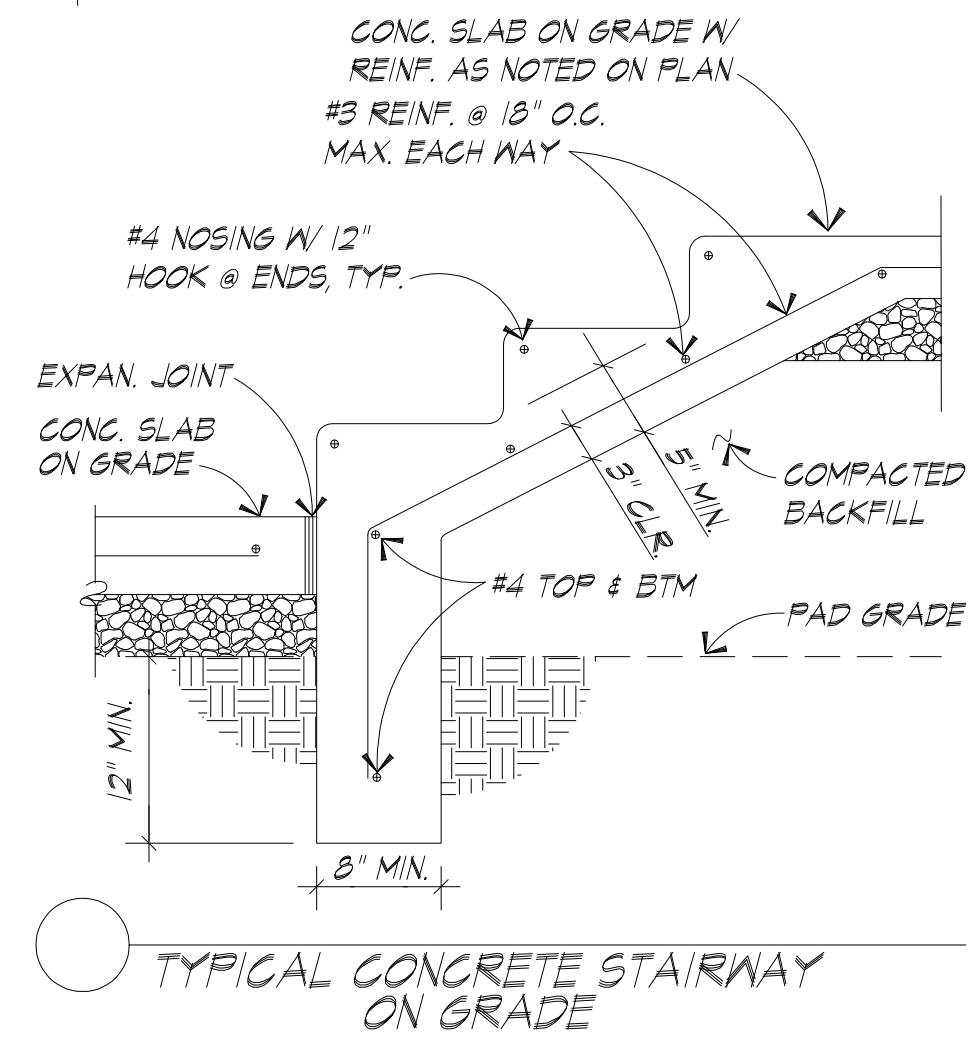
SITE PREPARATION AND EARTHWORK OPERATIONS:

ALL SUB-GRADE SURFACES THAT WILL RECEIVE STRUCTURAL OR ENGINEERED FILL SHOULD BE SCARIFIED TO DEPTH OF 12", MOISTURE-CONDITIONED WET OF OPTIMUM AND COMPACTED TO THE REQUIREMENTS GIVEN BELOW. THE PROPOSED STRUCTURAL FILL TO BE USED SHOULD BE TESTED FOR COMPACTION CHARACTERISTICS.

ANY IMPORTED FILL USED AT THE SITE SHOULD BE A NON-EXPANSIVE SOIL WITH A PLASTICITY INDEX OF 12 OR LESS. ALL FILL AND BACKFILL MATERIALS PLACED AT THE SITE SHOULD NOT CONTAIN ROCKS FOR LUMPS GREATER THAN 6 INCHES IN GREATEST DIMENSION WITH NO MORE THAN 15 PERCENT LARGER THAN 2.5 INCHES.

ALL STRUCTURE FILL AND BACKFILL MATERIALS PLACED AT THE SITE SHOULD BE COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION BY MECHANICAL MEANS ONLY AS DETERMINED BY ASTM TEST DESIGNATION D1557-78. THE UPPER SIX INCHES OF SUBGRADE SHOULD BE COMPACTED TO 95% DENSITY. THE FILL AND BACKFILL MATERIALS SHOULD BE SPREAD AND COMPACTED IN LIFTS NOT EXCEEDING 6 INCHES IN UNCOMPLICATED THICKNESS.

THE EXPOSED SUB-GRADE SOILS UNDER GRADE BEAMS SHALL BE PRE-WETTED 24 AND 12 HOURS PRIOR TO POURING CONCRETE. THE PRE-WETTING OF THE SOILS IS INTENDED TO REDUCE THE EXPANSIVE POTENTIAL OF THE SOILS BY INCREASING THE MOISTURE CONTENT TO DEPTHS OF 2 FOOT OR GREATER.



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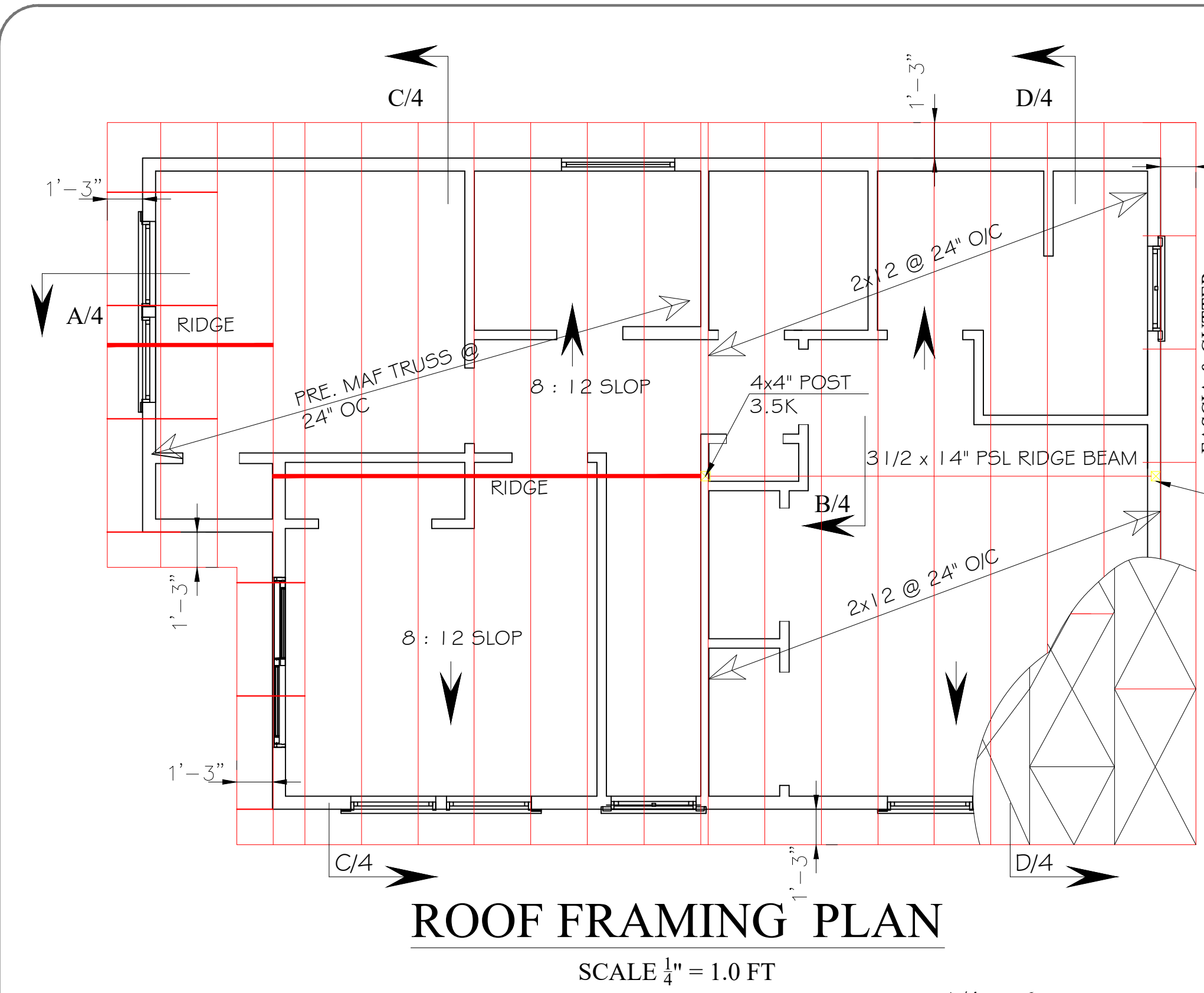
PROJECT
 NEW EVAN'S RESIDENCE
 6173 VALLEY VIEW DRIVE
 OAKLAND, CA
RETAINING WALL PLAN



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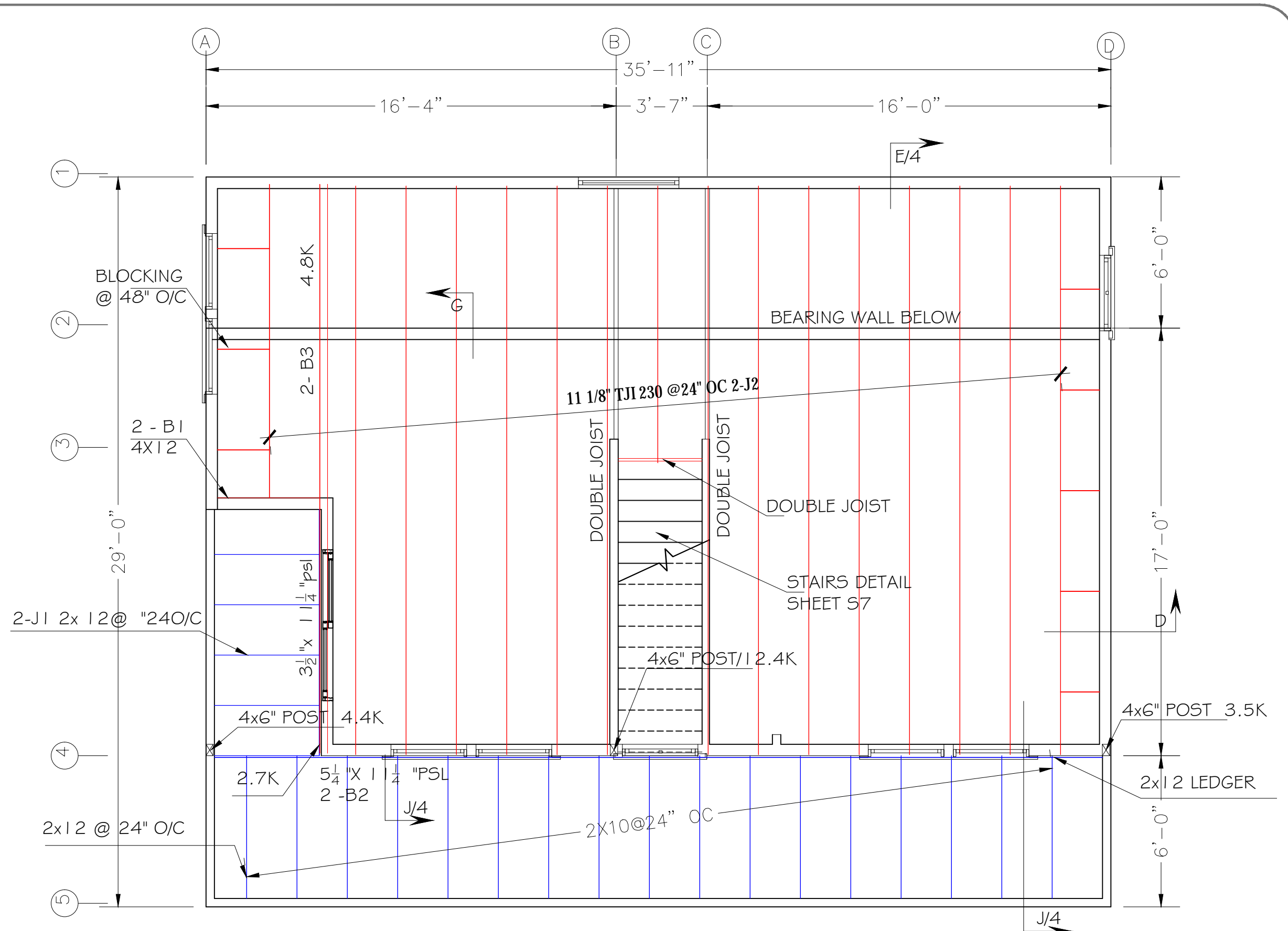


ROOF FRAMING PLAN
SCALE 1/4" = 1.0 FT

- ROOFING SYSTEM**
- COMPOSITE SHINGLES
 - 15 LB FELT UNDERLAYMENT INSTALLED PER MFR INSTRUCTIONS
 - 1/2" PW/OSB RATED ROOF SHEATHING
 - 8d 4" EDGES 10" FIELD TYP.
 - 5" PROFILE GUTTER W/RAIN LEADERS & SPLASH BLOCKS
 - ATTIC VENTILATION 1/150 MINIMUM FROM EAVE-GABEL & ROOF VENTS
 - FASCIA 2x6 SELECT
 - EAVE VENTS SCREENED 4"x 16" GALV
 - 26 GA GSM VALLEY FLASHING
 - SIMPSON H1 CONNECTERS AT EACH RAFTER TO PLATE CONNECTION
 - SIMPSON CEILING JOIST CLIPS AT EACH JOIST CROSSING PARTITION

VENTILATION:
ROOF AREA (VAULT AREA NOT INCLUDED) = 412 SF
REQ VENT. 2.75 SF
USE 8- 4X14" VENT BLOCKS
VENT AREA 3.1 SF

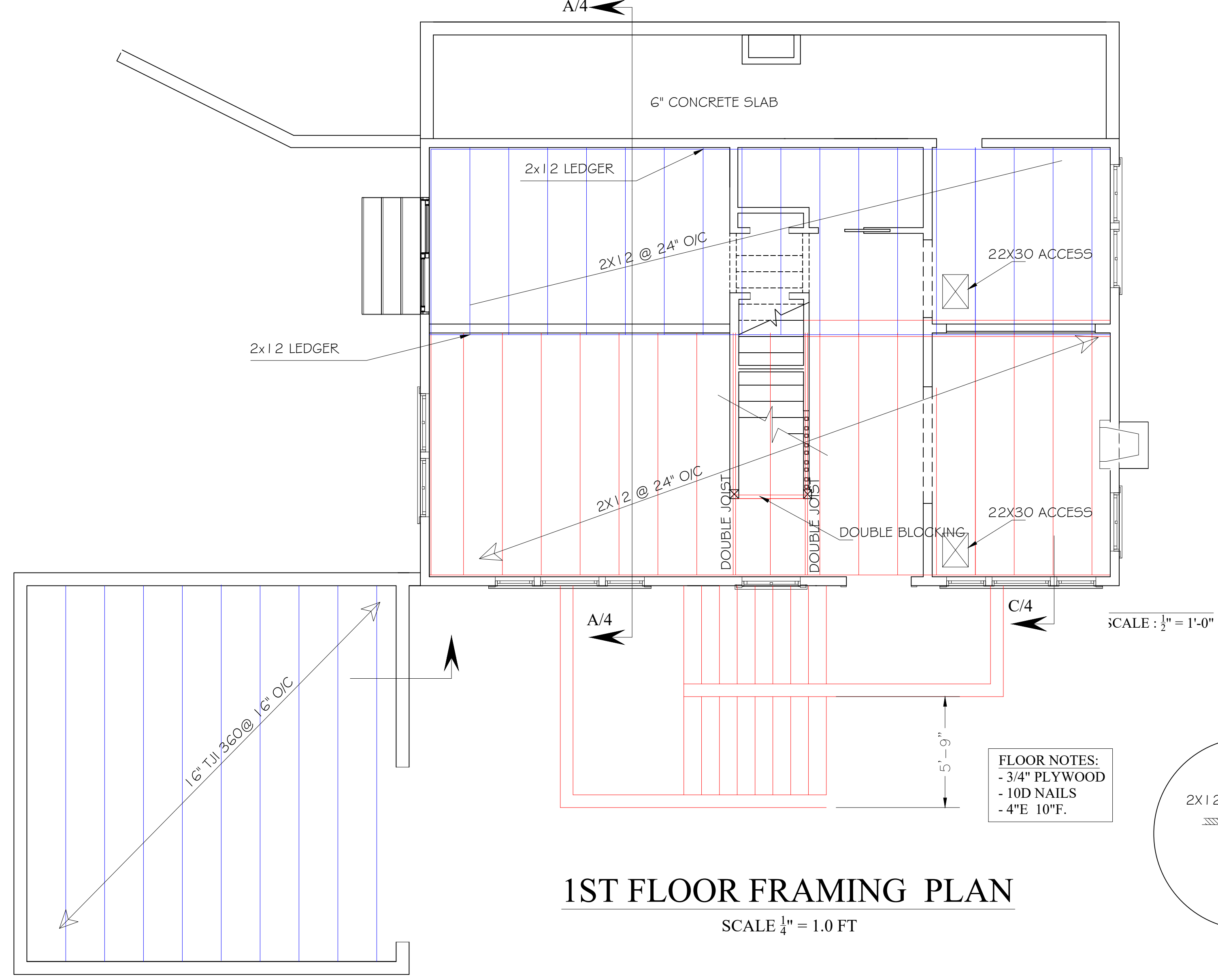
VENTILATION:
FLOOR AREA (VAULT AREA NOT INCLUDED) = 968 SF
REQ VENT. 6.45 SF
USE 4- 12X24" VENTS THROUGH WALL
VENT AREA 8 SF



2ND FLOOR FRAMING PLAN
SCALE 1/4" = 1.0 FT

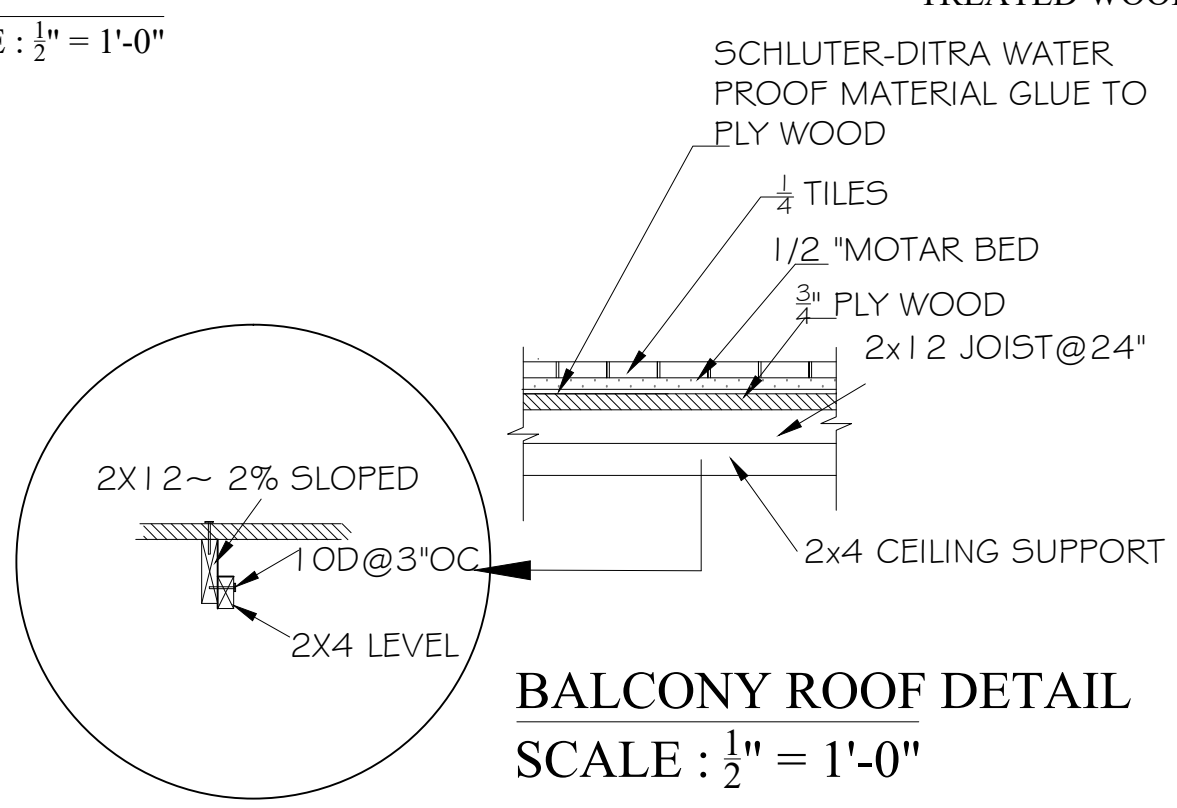
- LUMBER NOTES**
- ALL LUMBER SHALL BE DOUGLAS FIR OF THE FOLLOWING GRADE UNLESS NOTED OTHER WISE (OR EQUIVALENT GRADE OF ANOTHER SPECIES) AND SHALL HAVE MAX. 19% MOISTURE CONTENT AT TIME OF INSTALLATION:
ALL WOOD NEEDS TO BE FOREST STEWARDSHIP COUNCIL (FSC) CERTIFIED WOOD FRAMING.
RAFTERS AND JOISTS NO.2 OR BETTER
STUDS AND PLATES CONSTRUCTION
BEAMS NO. 2 OR BETTER
POSTS AND MULLIONS NO. 2 OR BETTER
MISX. - BLOCKING, FURNING, ETC. NO. 2
 - ALL STRUCTURAL LUMBER SHALL BE GRADED IN ACCORDANCE WITH GRADING AND DRESSING RULES # 16 OF THE WEST COAST LUMBERMAN'S ASSOCIATION.
 - ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR.
 - STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC., UNLESS SPECIFICALLY NOTED OR DETAILED
 - HOLES FOR BOLTS SHALL BE BORED 1/8" TO 1/4" LARGER THAN THE NOMINAL BOLT DIAMETER
 - ALL BOLTS SHALL BE RETIGHTENED PRIOR TO APPLICATION OF GYPSUM BOARD, PLYWOOD, ETC
 - ALL BOLTS BEARING ON WOOD SHALL HAVE WASHERS UNDER HEAD AND/OR NUTS .
 - APPROPRIATE BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS. (USE 2x SOLID BLOCKING FOR SOLID SAWN LUMBER AND TJI BLOCKING FOR TJI MEMBERS.)
 - CROSS-BRIDGING OR SOLID BLOCKING SHALL BE PROVIDED AT 8'-0" O.C. MAXIMUM FOR ALL JOISTS AND RAFTERS MORE THAN 8" IN DEPTH. 2x3 OR APPROVED METAL TYPE BRIDGING MAY BE USED.
 - ALL POSTS SHALL HAVE CONNECTORS AT TOP AND BOTTOM, WHICH SHALL BE SIMPSON "CC" OR "CB" UNLESS SPECIFICALLY DETAILED OTHERWISE.
 - PLYWOOD SHEETING AND SHEAR PANELS SHALL BE DOUGLAS FIR CONFORMING TO U.S. PLYWOOD STANDARD PS-1-83 WITH EXTERIOR GLUE.
 - USE GALVANIZED CONNECTORS AND NAILS (IF GALVANIZED IT SHALL BE G 185) OR USE BITUTHENE TO SEPARATE CONNECTORS AND WOOD. FOR ALL CONNECTIONS TO PRESSURE TREATED WOOD

- PARALLEL STRAND LUMBER (PSL)**
- PARALLEL STRAND LUMBER SHALL BE MANUFACTURED BY A LICENSED BY A LICENSED FABRICATOR CERTIFIED TO HAVE BEEN CURRENTLY INSPECTED BY QUALITY CONTROL PERSONNEL OF APA - THE ENGINEERED WOOD ASSOCIATION. SUBMIT I.C.B.O. REPORT FOR REVIEW.
 - ALL PARALLEL STRAND LUMBER EXPOSED TO WEATHER SHALL BE RATED AND APPROVED FOR EXTERIOR USE.
 - PARALLEL STRAND LUMBER SHALL BE GRADE SPECIES 2.0E, WITH THE FOLLOWING MINIMUM VALUES.
E = 2,000,000 PSL
FB = 2900 PSL
FT = 2025 PSL
FV = 290 PSL
FC-PERPENDICULAR = 750 PSL
FC-PARALLEL = 2900 PSL
 - PARALLEL STRAND LUMBER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL BRACING AND BRIDGING AS REQUIRED BY THE MANUFACTURER.



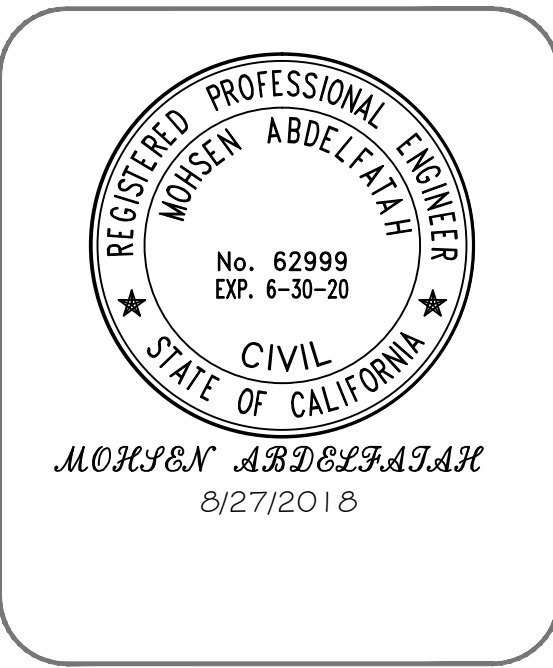
1ST FLOOR FRAMING PLAN
SCALE 1/4" = 1.0 FT

FLOOR NOTES:
- 3/4" PLYWOOD
- 10D NAILS
- 4"E 10'F.



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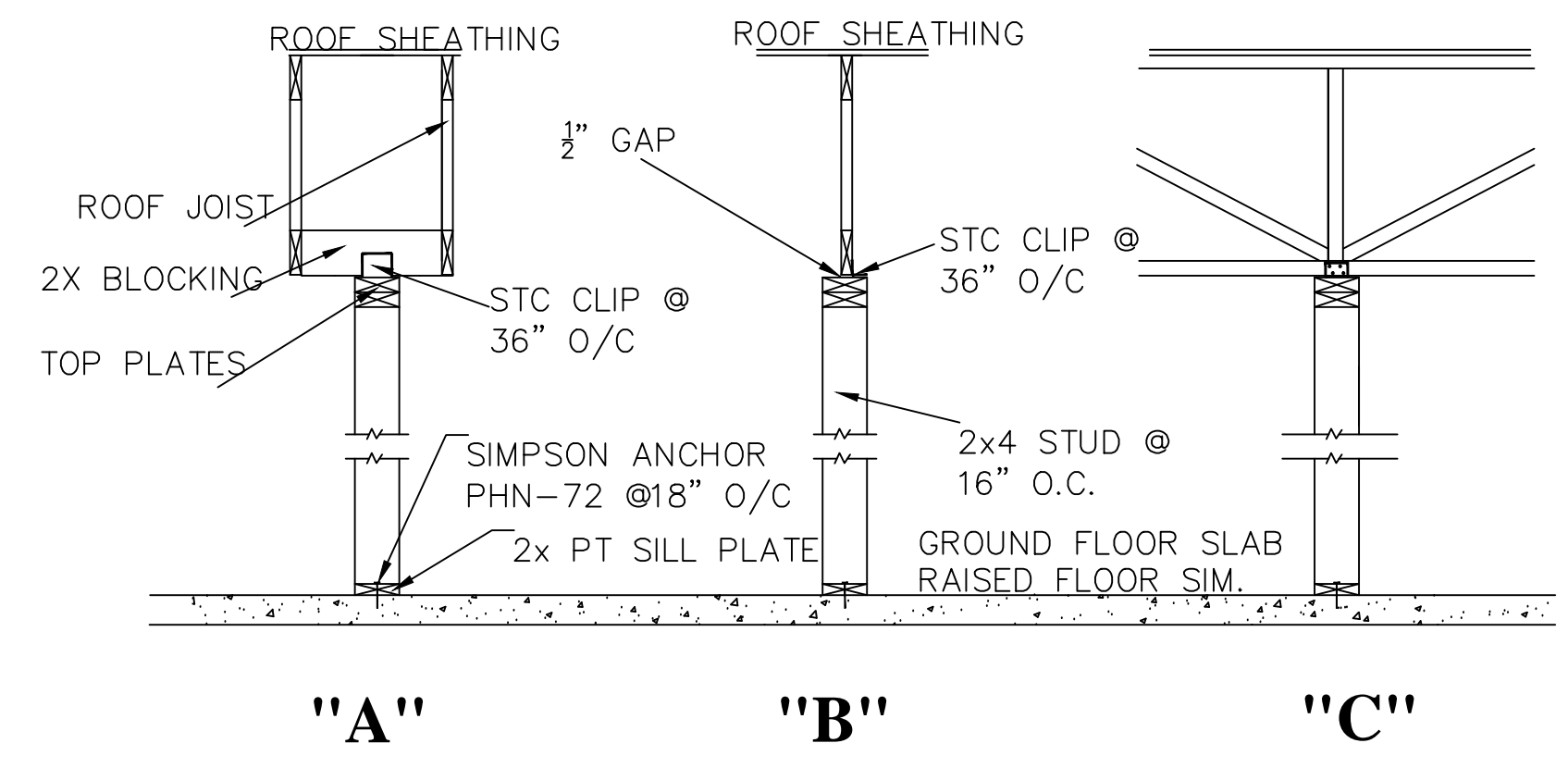
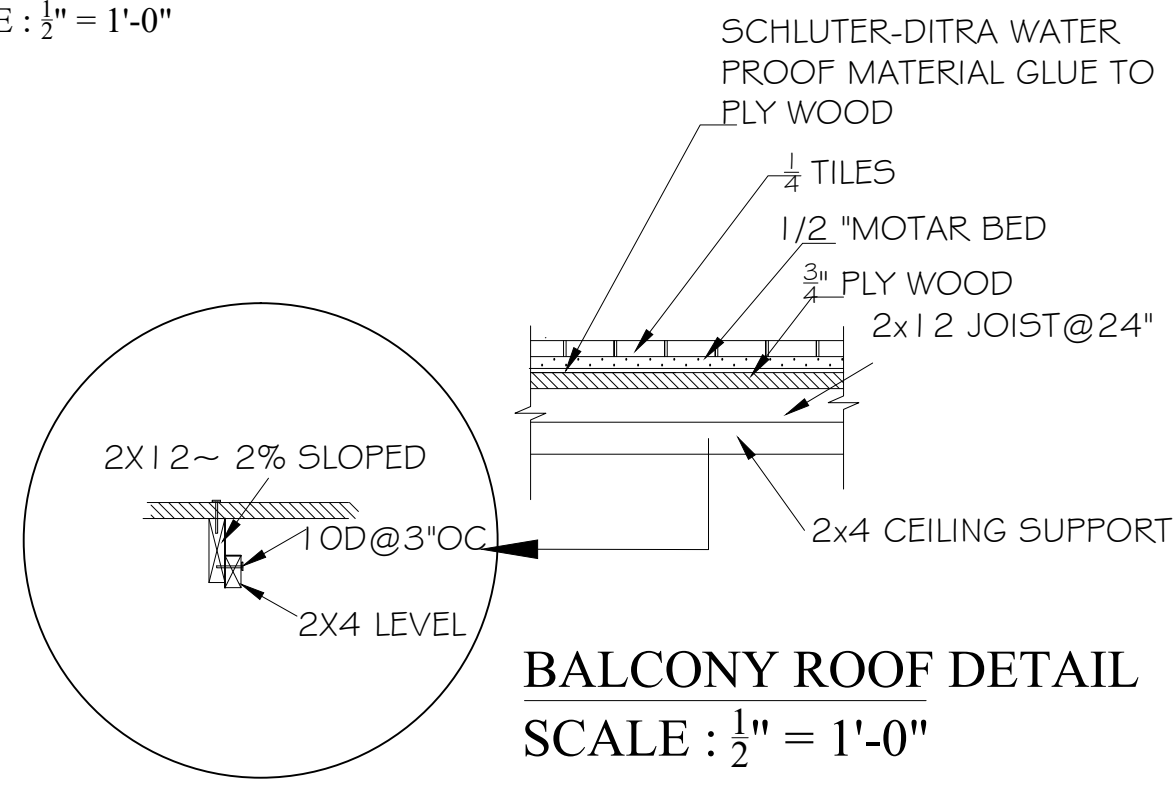
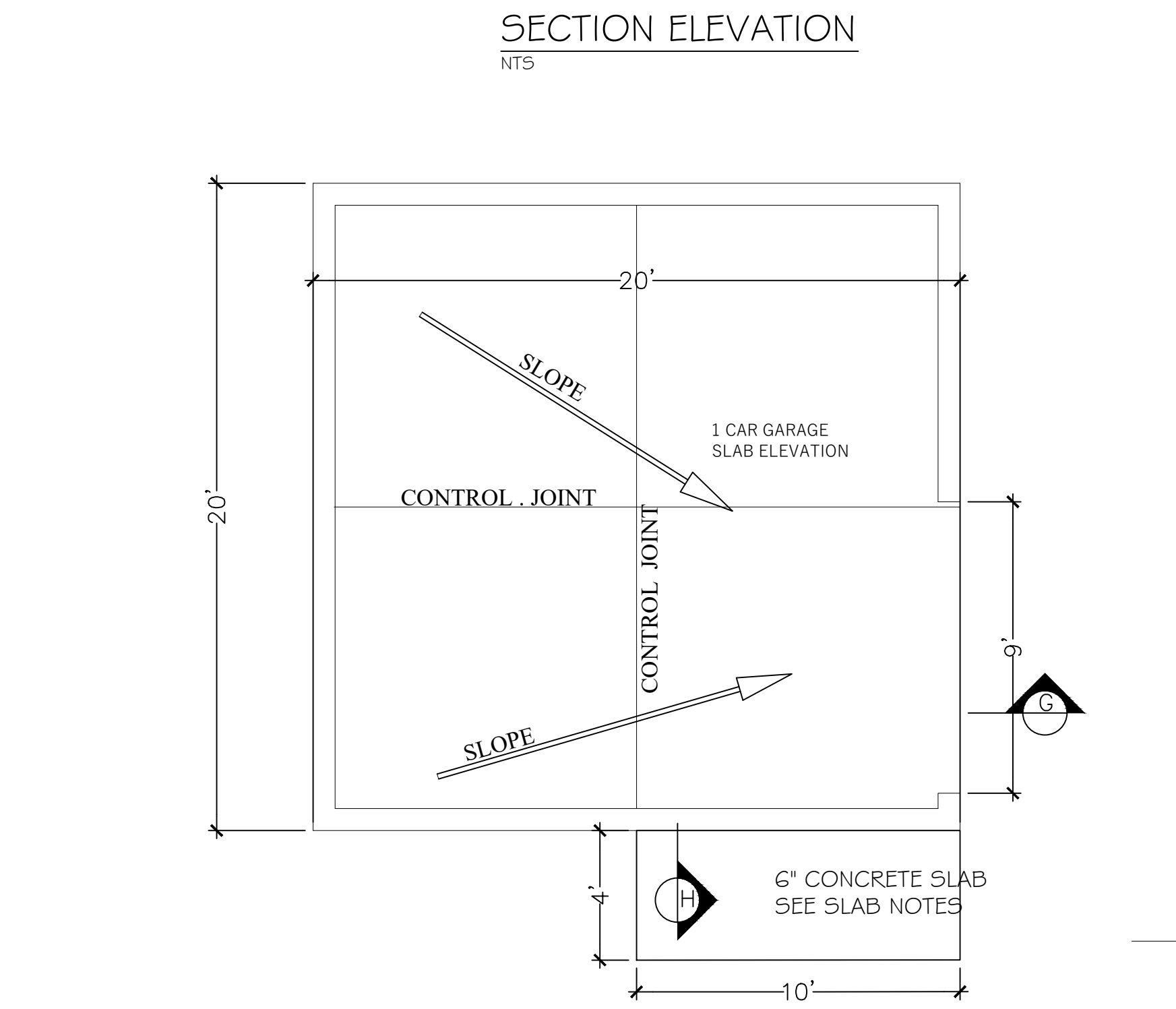
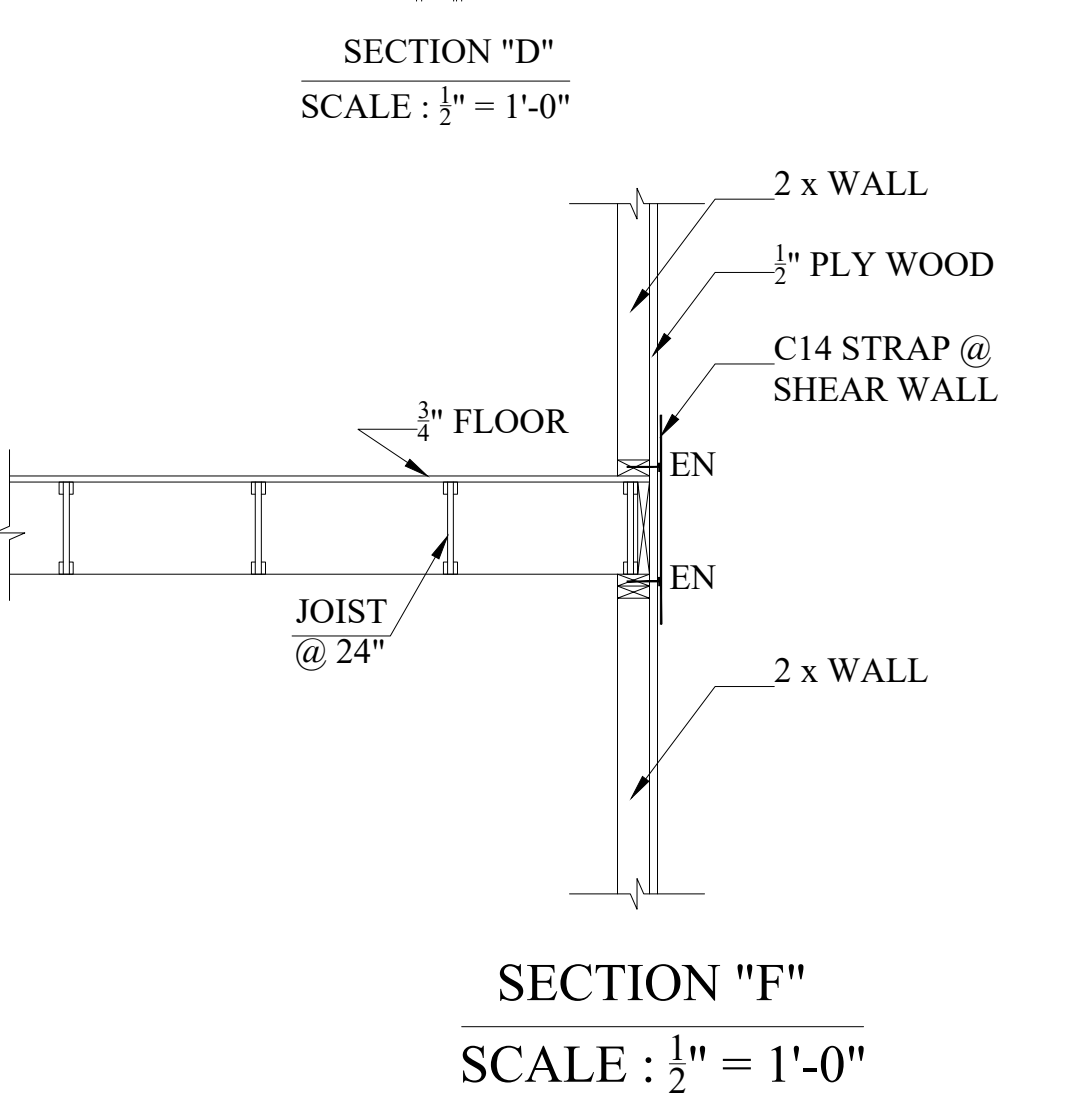
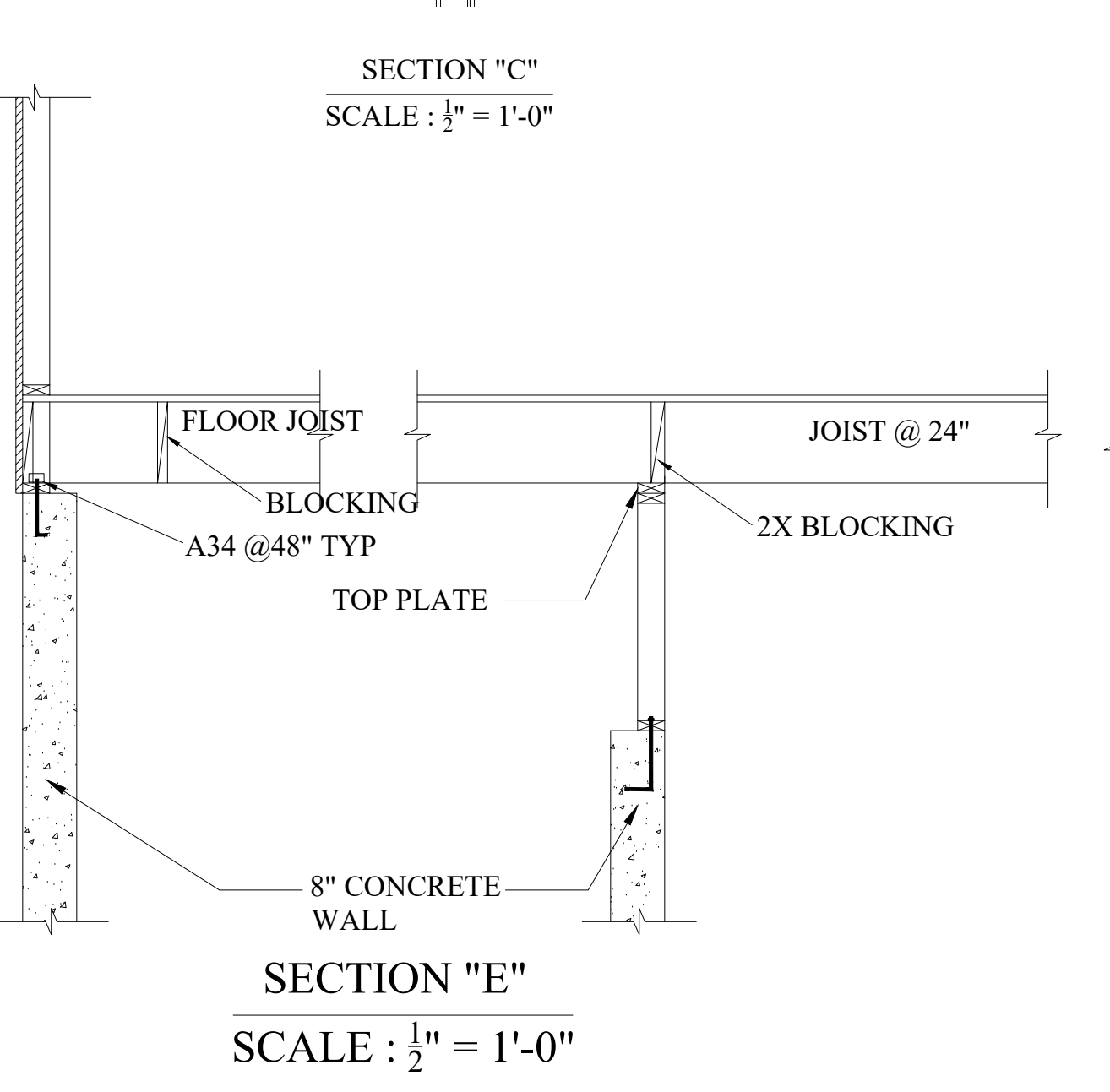
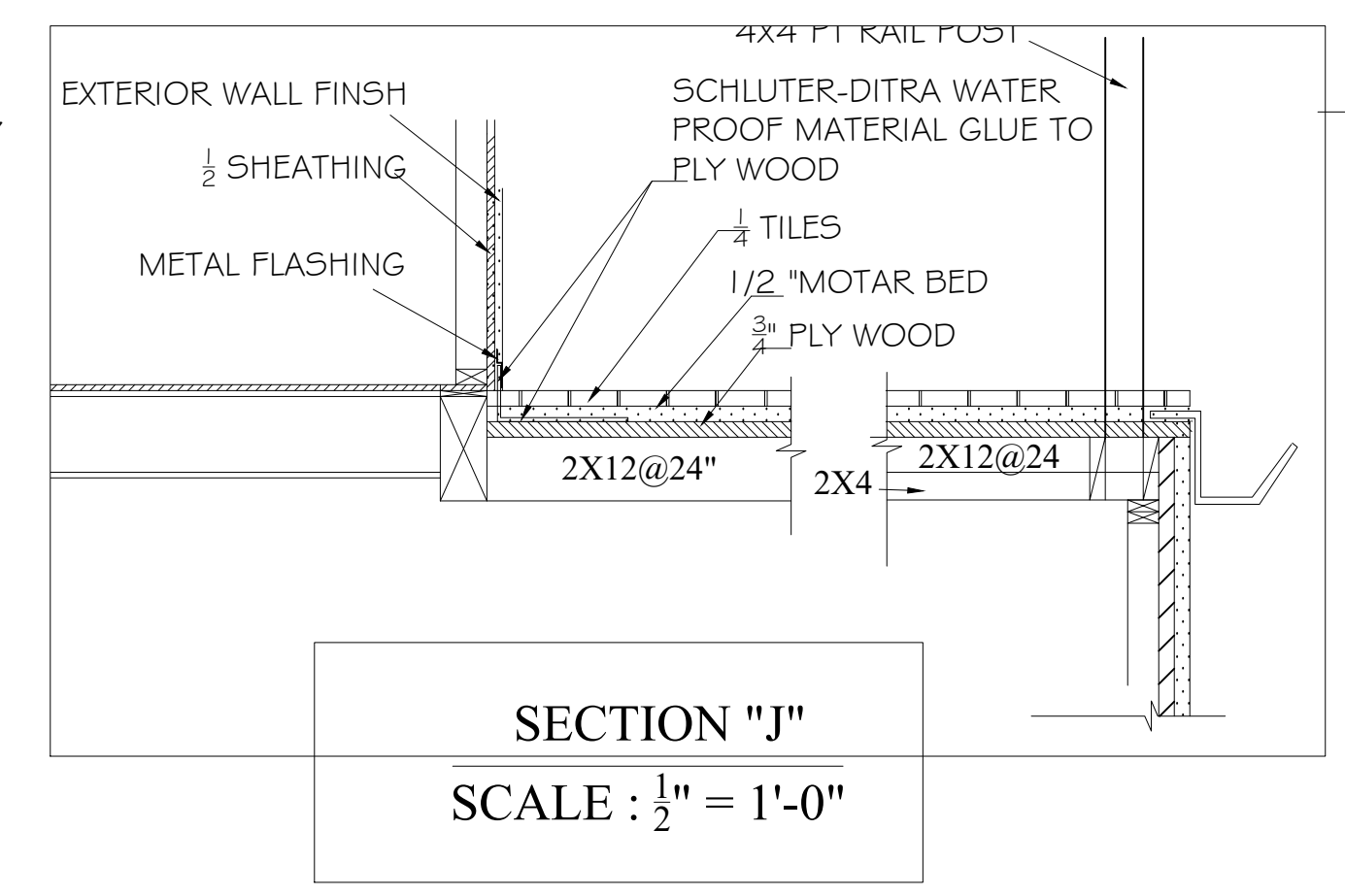
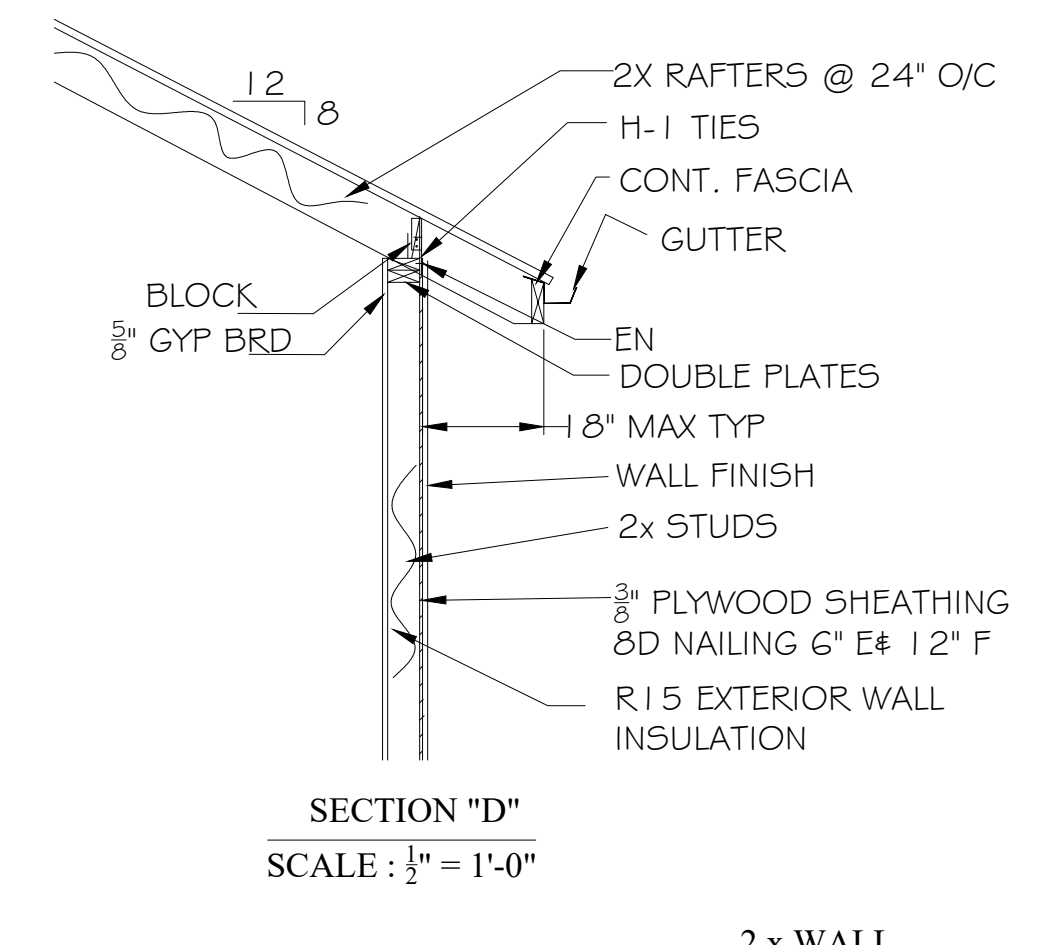
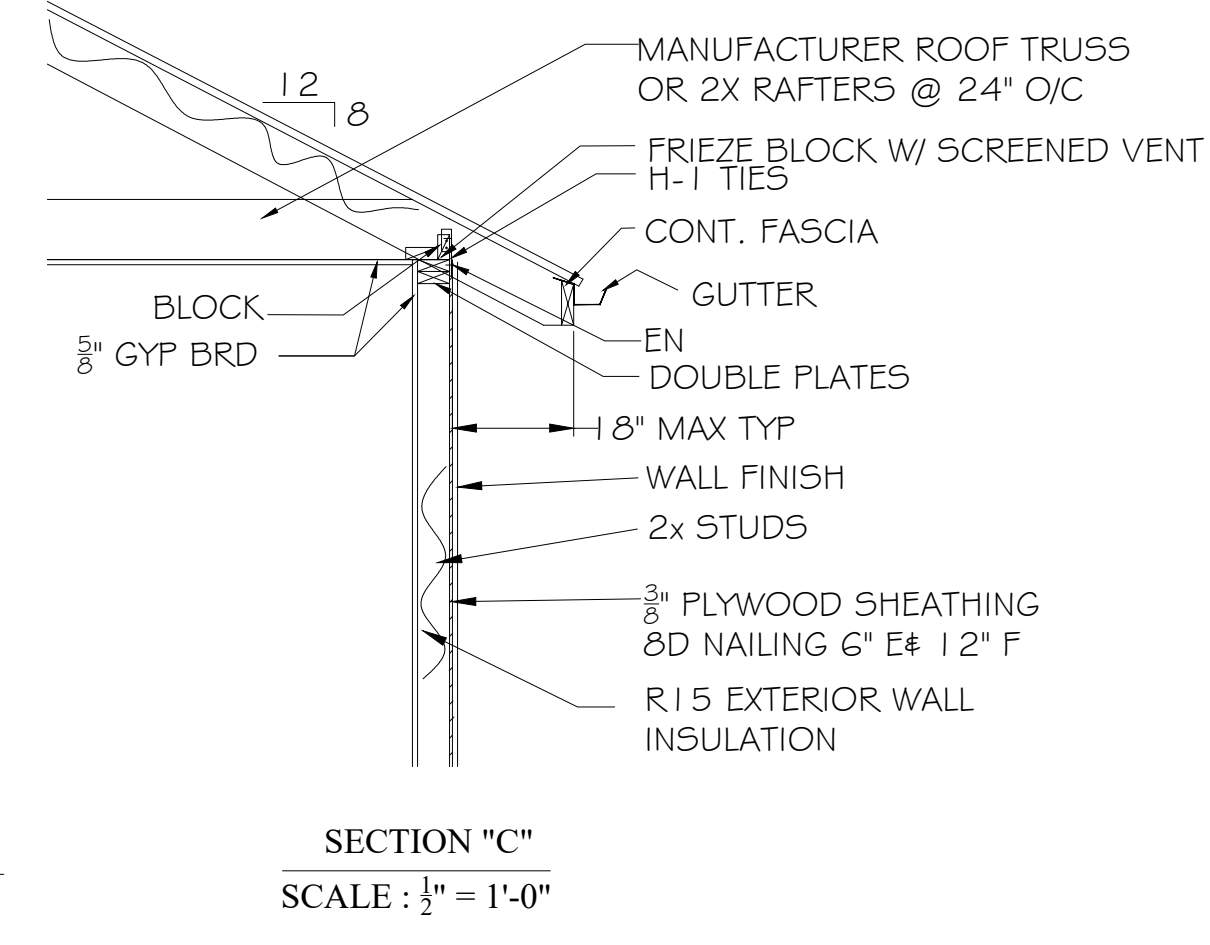
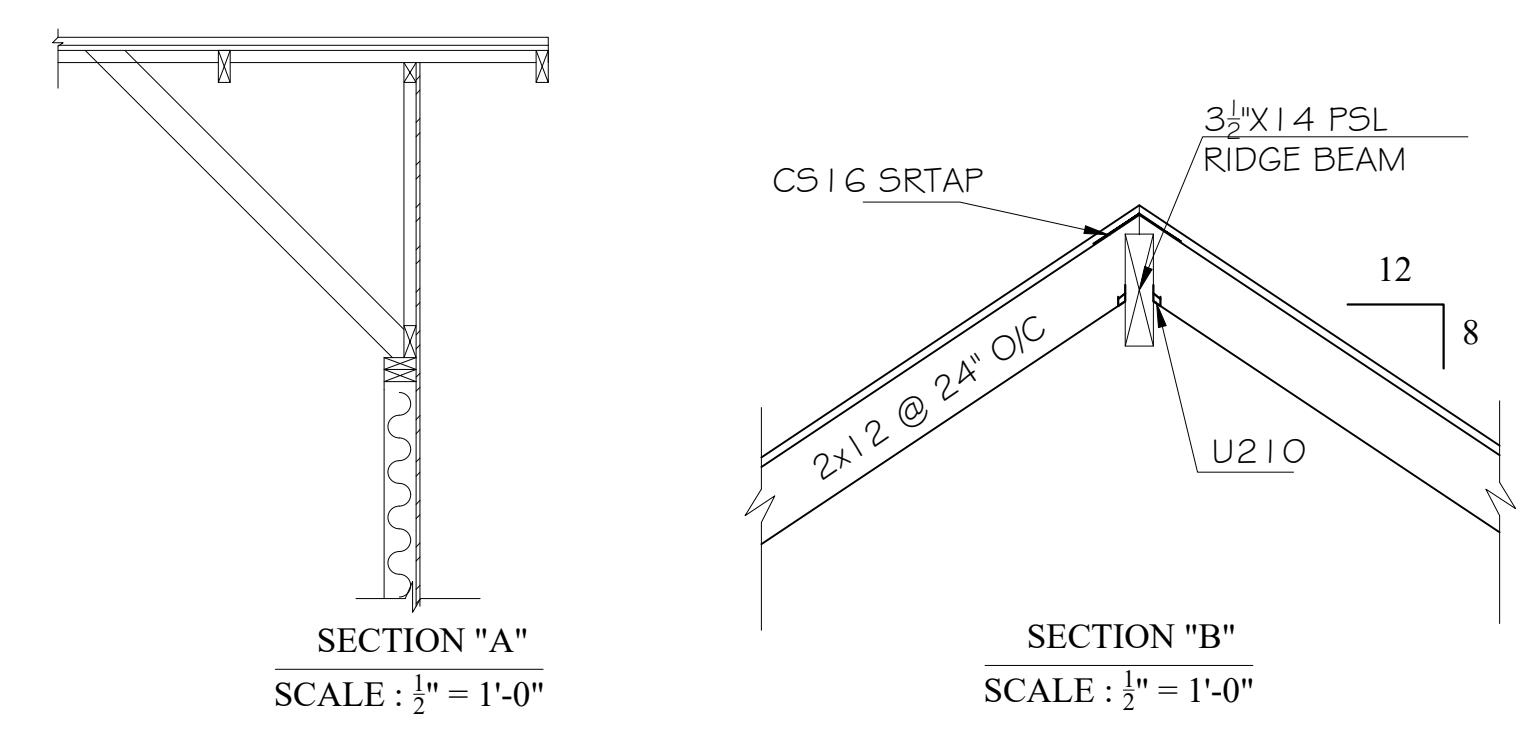
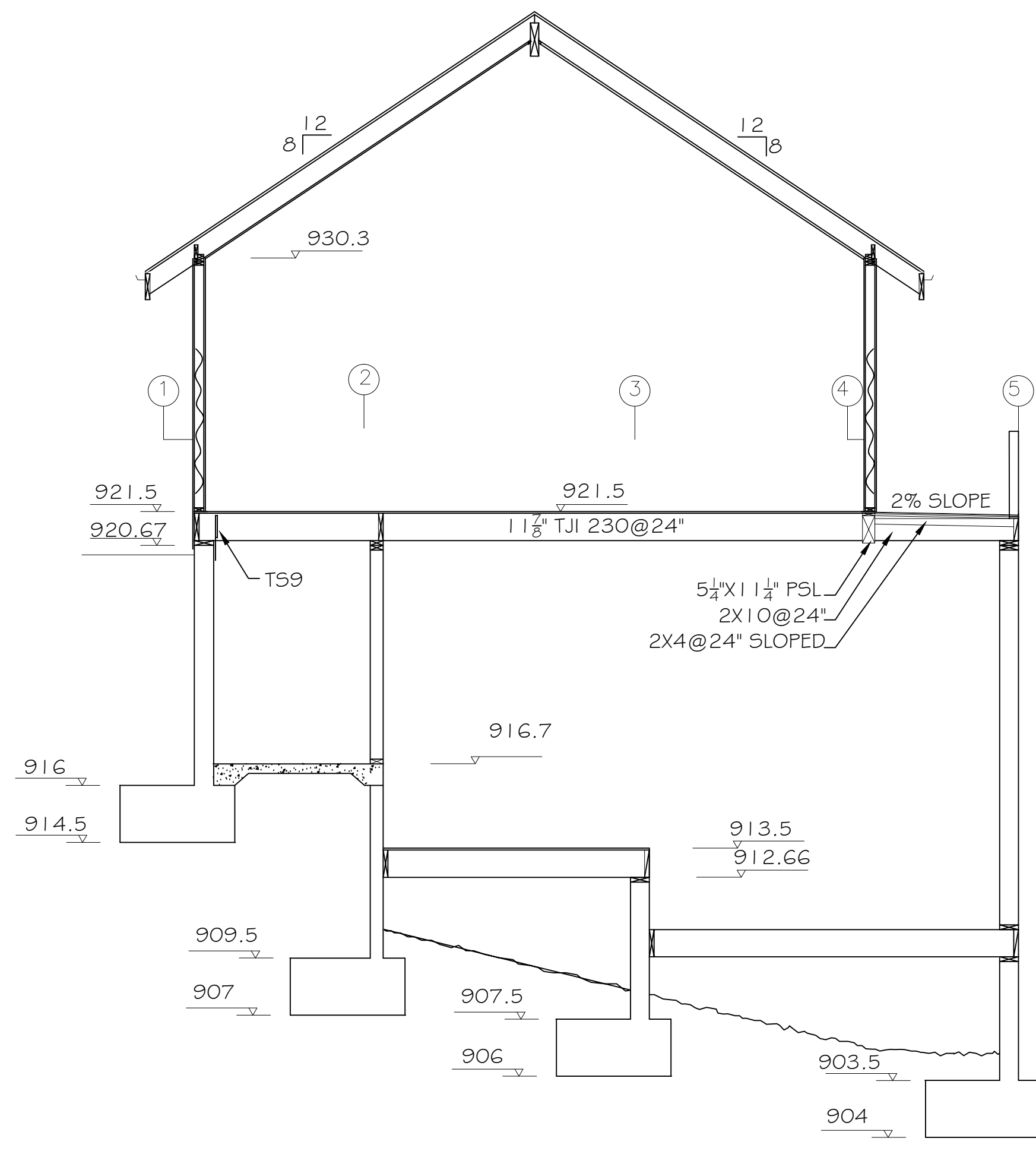
PROJECT
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OAKLAND, CA
ROOF-FLOOR FRAMING PLAN



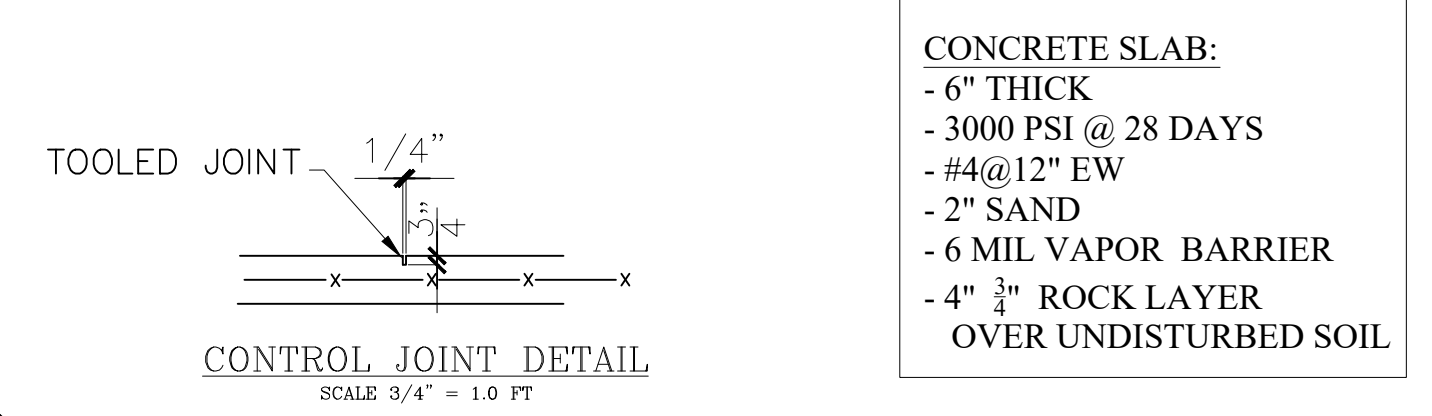
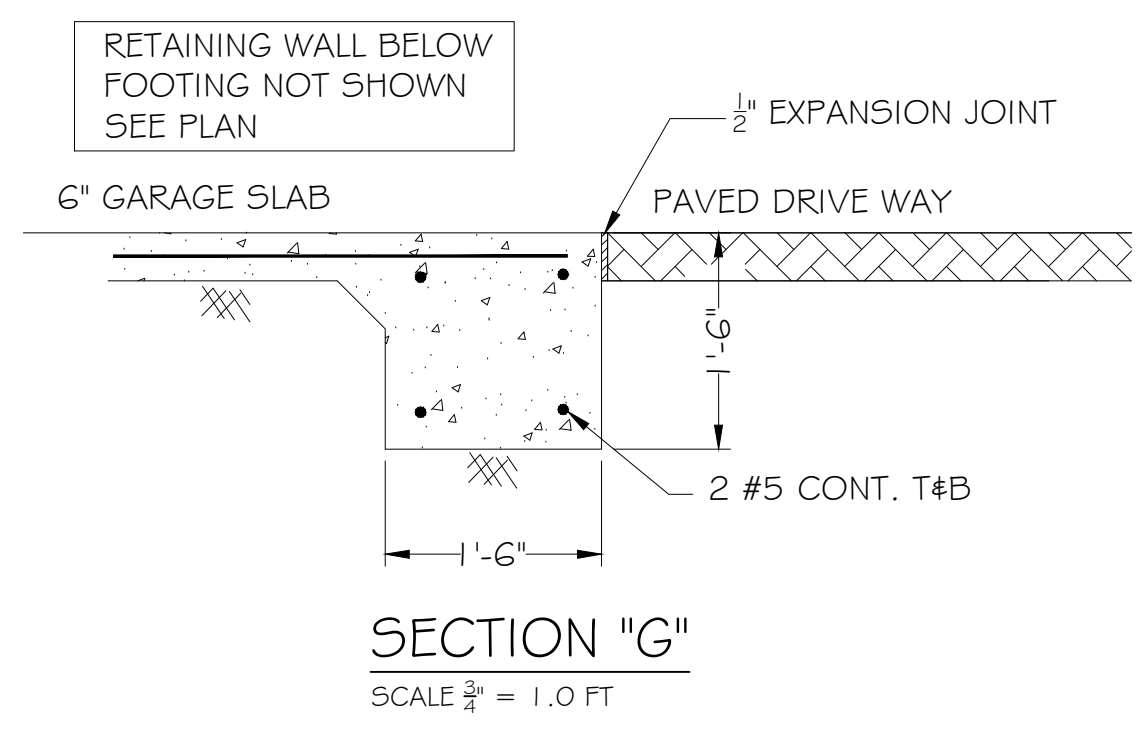
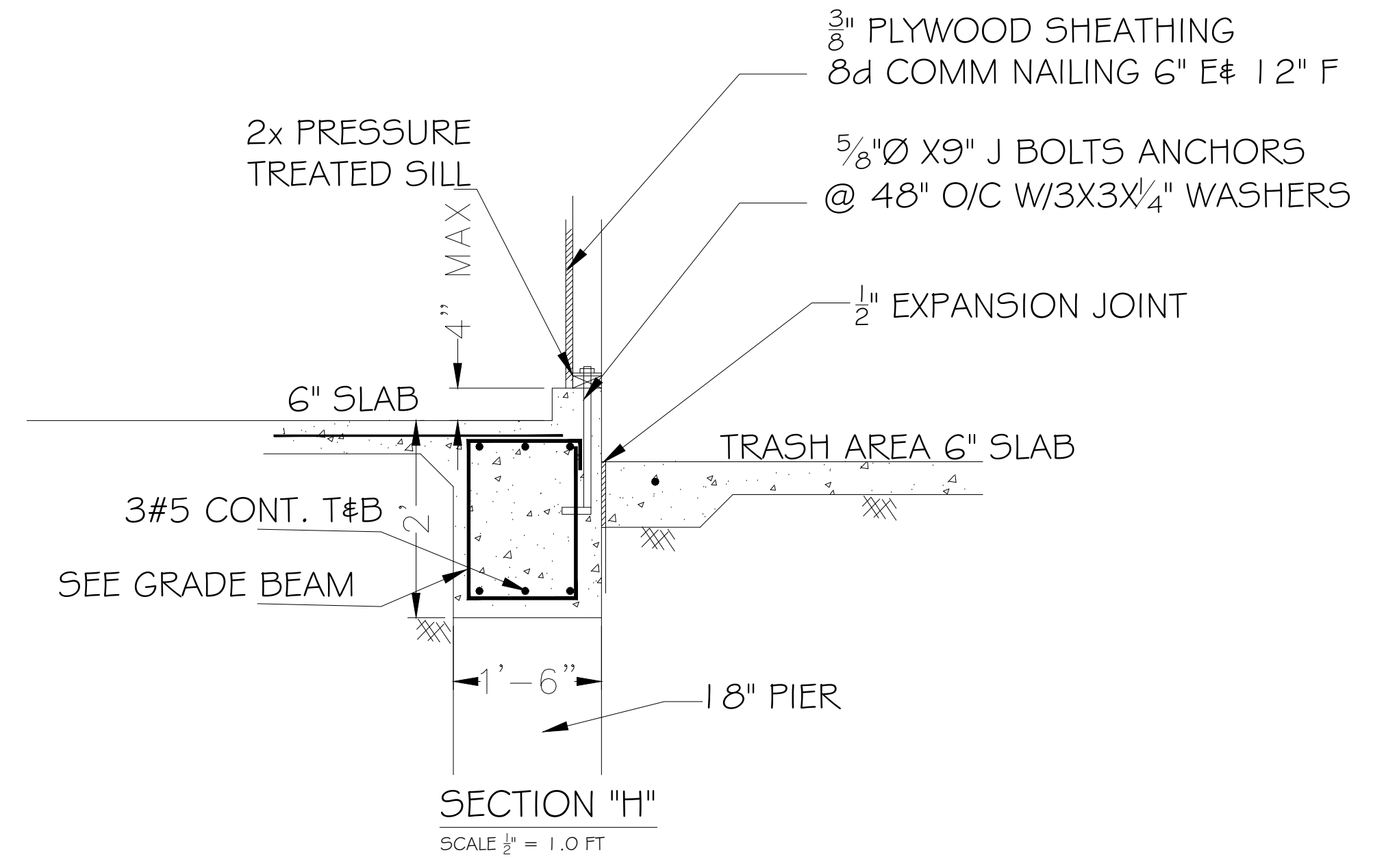
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S-3



INTERIOR WALL CONNECTIONS
SCALE: 1/2" = 1.0 FT



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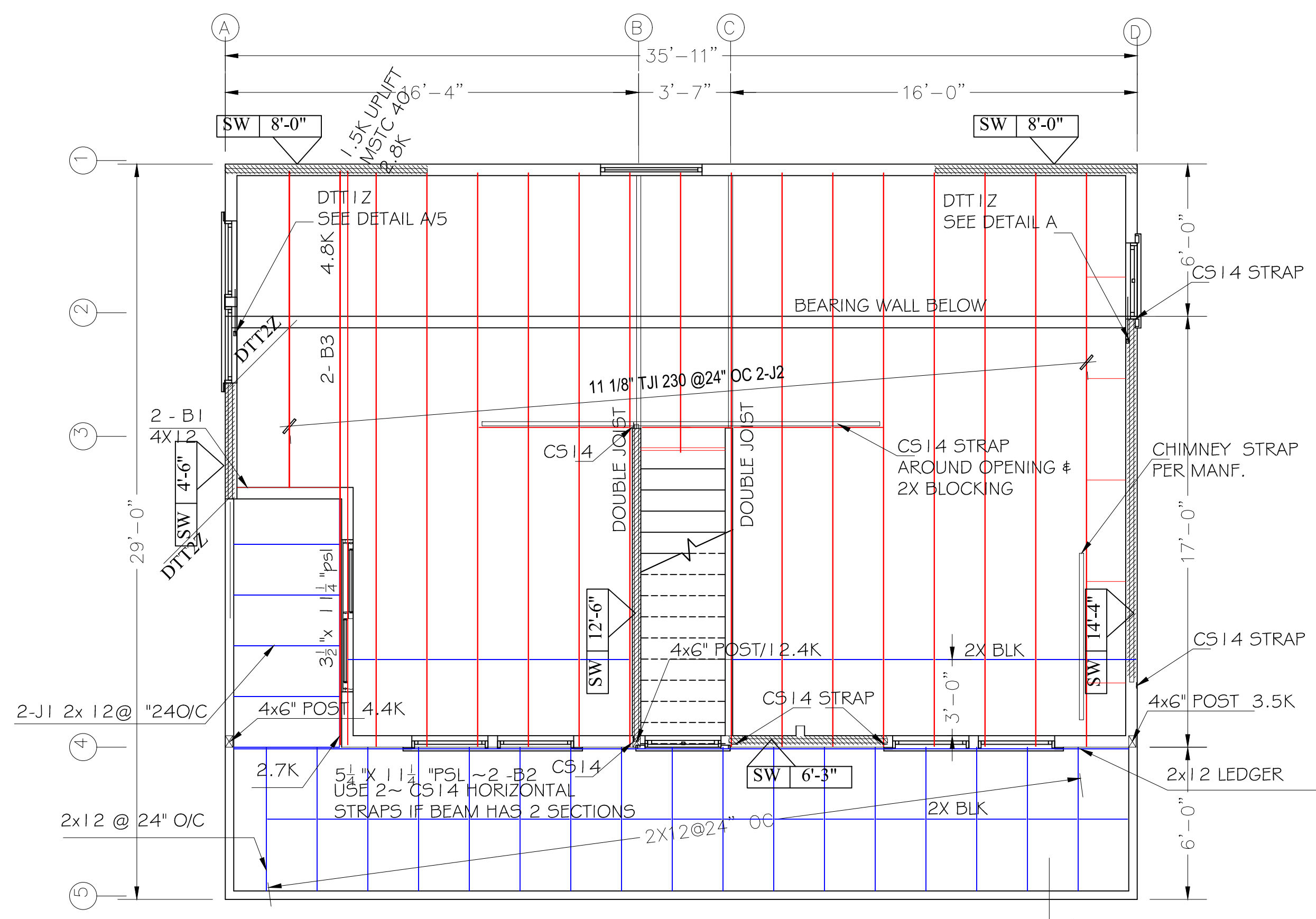
SECTION ELEVATION- DETAILS



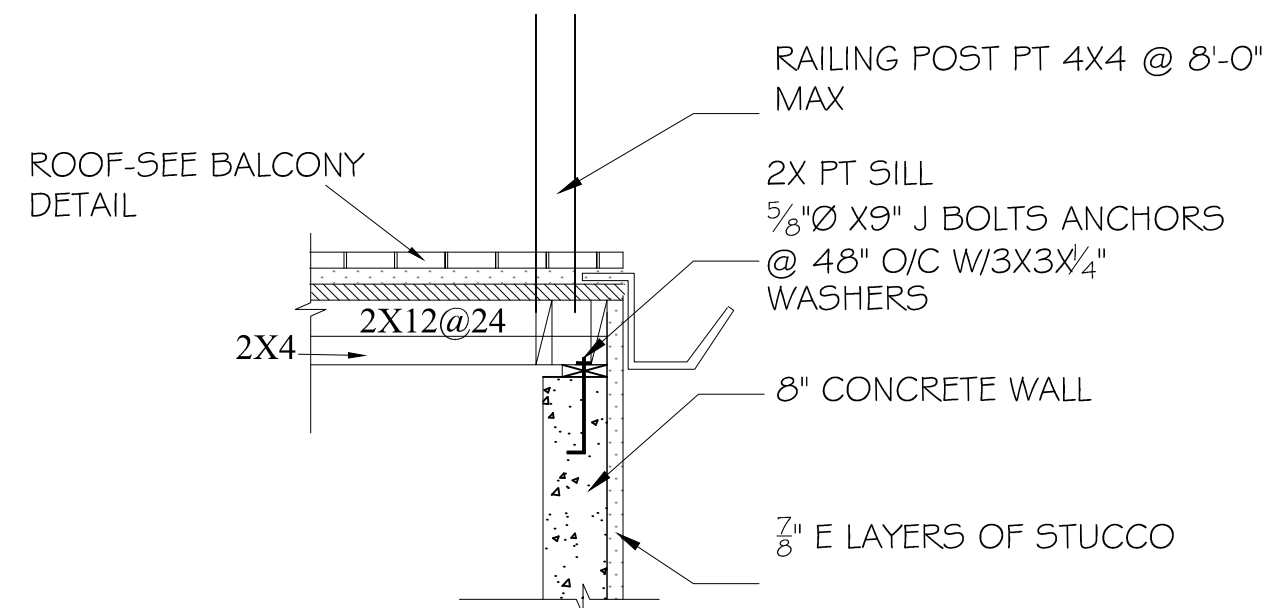
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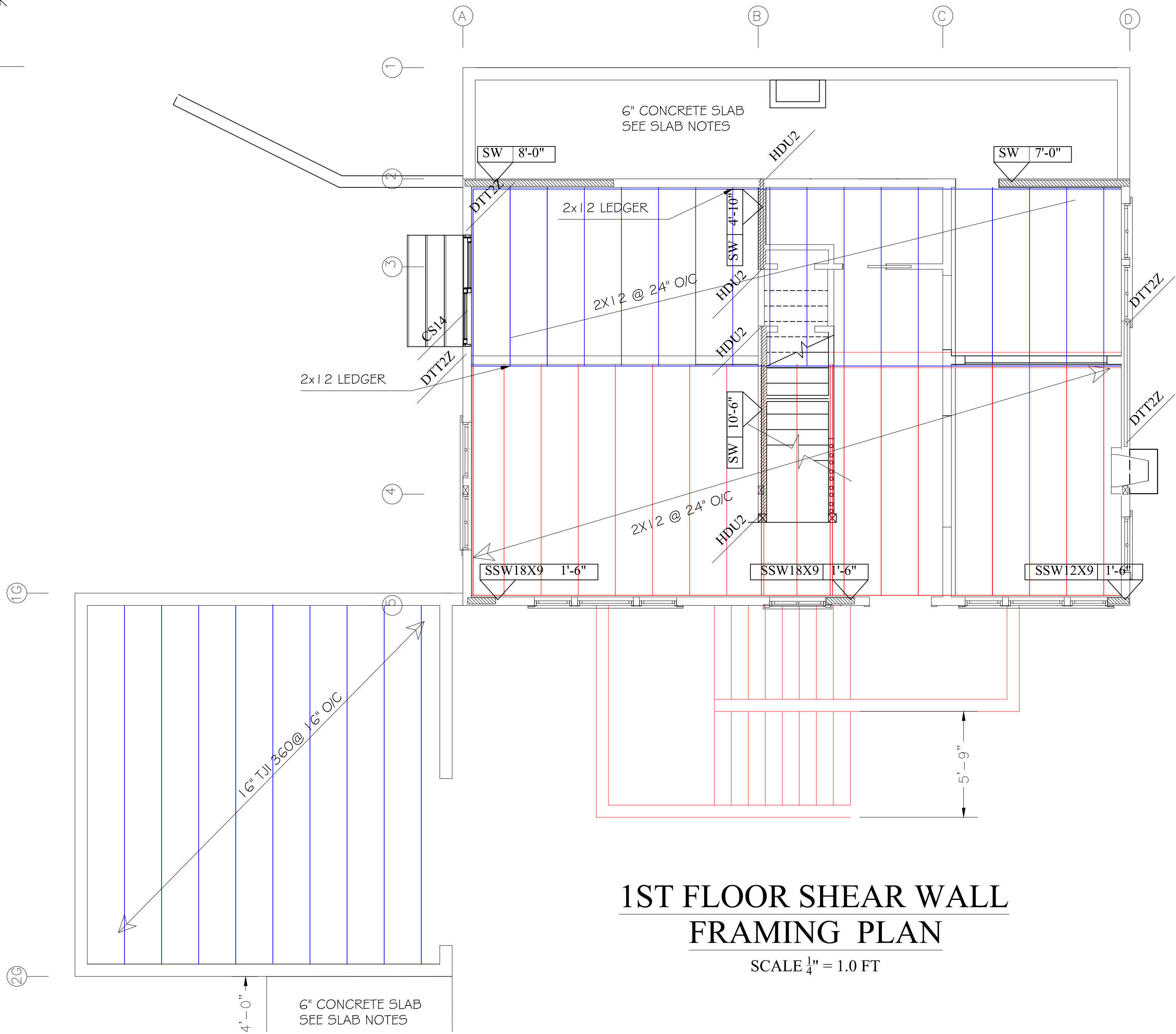
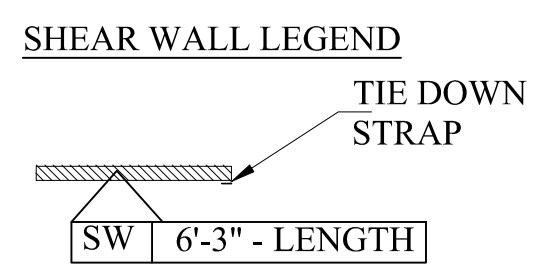
S-4



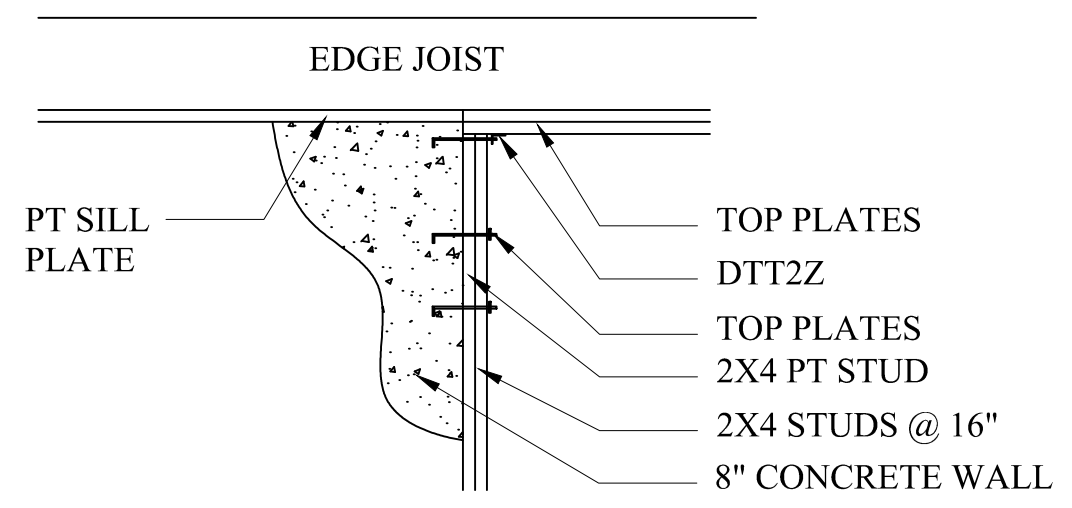
2ND FLOOR SHEAR WALL FRAMING PLAN
SCALE: $\frac{1}{4}'' = 1.0 \text{ FT}$



GARAGE ROOF DETAIL
SCALE: $\frac{1}{2}'' = 1'-0''$



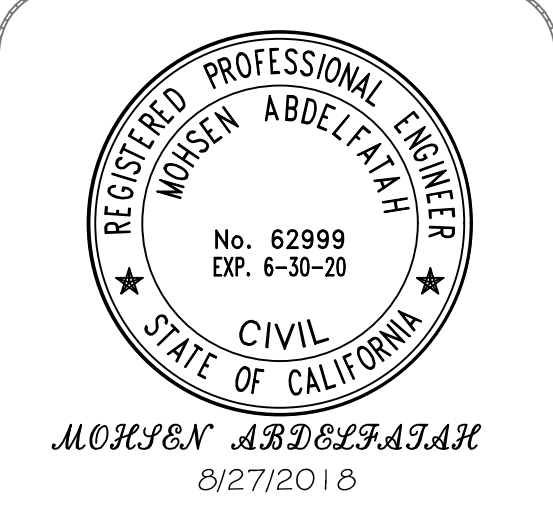
1ST FLOOR SHEAR WALL FRAMING PLAN
SCALE: $\frac{1}{4}'' = 1.0 \text{ FT}$



SECTION "A"
SCALE: $\frac{1}{2}'' = 1'-0''$

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PROJECT
NEW EVAN'S RESIDENCE
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OAKLAND, CA
SHEAR WALL PLAN



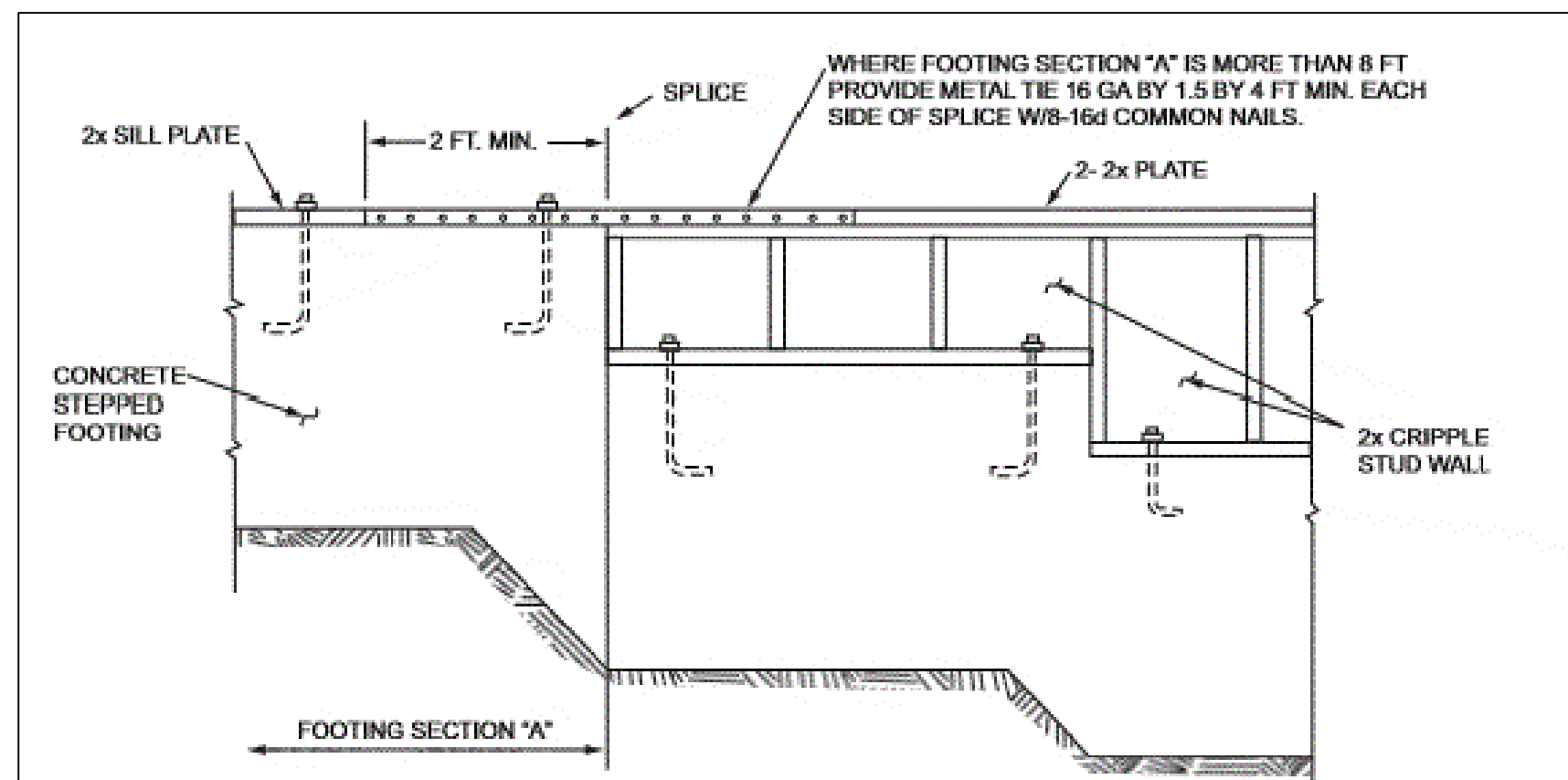
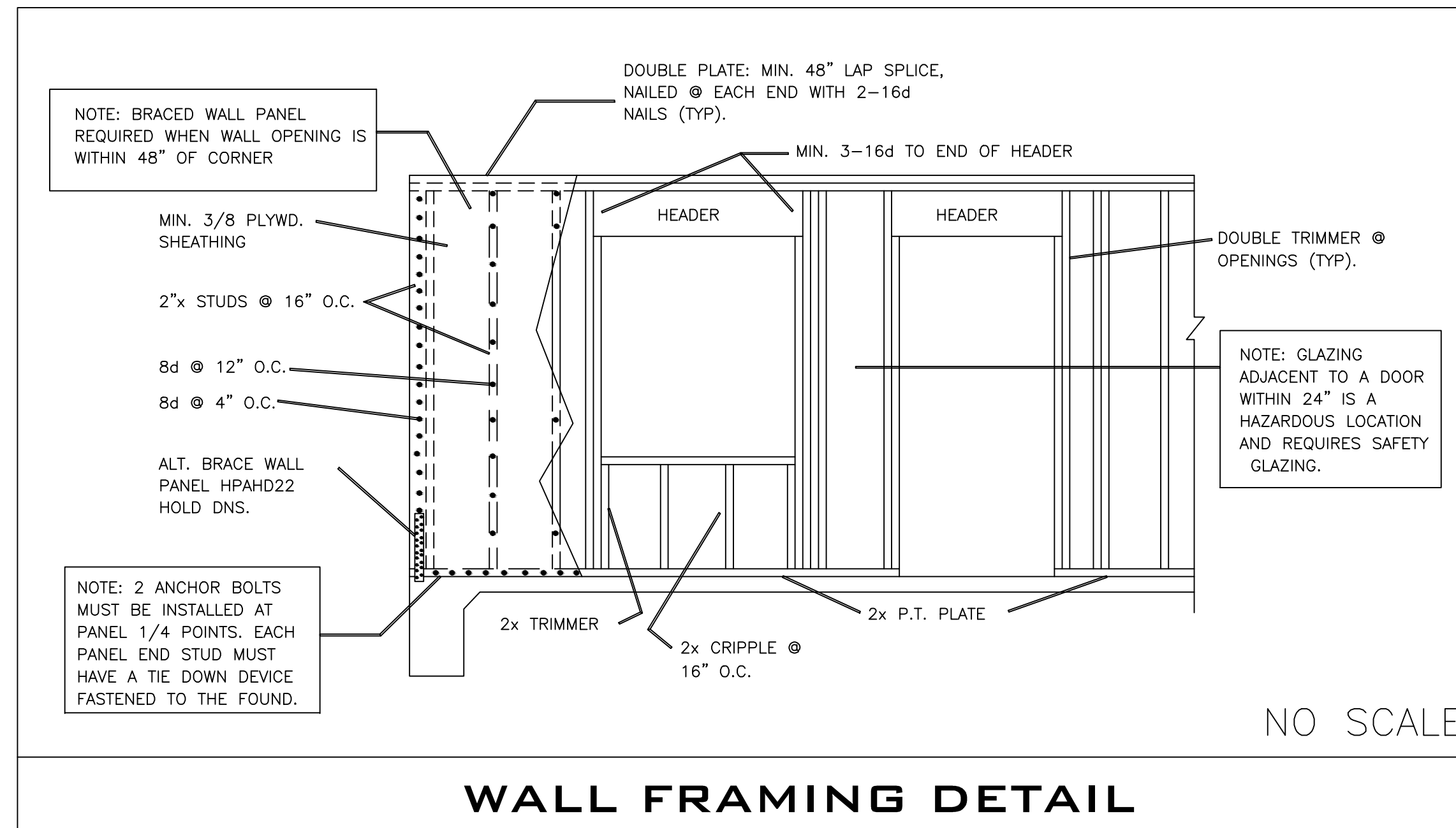
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GENERAL NOTES:

1. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONTRACT DOCUMENTS AND THE EXISTING FIELD CONDITIONS, AND SHALL AT ONCE REPORT TO THE ENGINEER ANY ERROR, INCONSISTENCY, OR OMISSION HE MAY DISCOVER. THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK AT ANY TIME WITHOUT APPROVED CONTRACT DOCUMENTS, APPROVED SHOP DRAWINGS, PRODUCT LITERATURE, DATA, SAMPLES OR INSTALLATION INSTRUCTIONS.
2. THE CONTRACT DOCUMENTS INDICATE THE EXTENT AND APPROXIMATE LOCATION OF ELEMENTS OF THE BUILDING AND SITE. ALL CONDITIONS, LOCATIONS, DEVICES AND ELEMENTS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING THE WORK.
3. ALL WORK INCLUDING SITE WORK SHALL BE PERFORMED IN CONNECTION WITH THESE CONTRACT DOCUMENTS AND COMPLY WITH ALL STATE AND LOCAL CODES, ORDINANCES AND ZONING REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.
4. IT SHALL BE UNDERSTOOD THAT THE INTENT OF THESE CONSTRUCTION DOCUMENTS IS TO CONSTRUCT THE FACILITY IN ACCORDANCE WITH THE APPLICABLE CODES AND ORDINANCES. SHOULD ANY CONDITION BE UNCOVERED OR DEVELOP DURING THE EXECUTION OF THESE DOCUMENTS, WHICH IS NOT DEFINED HEREIN, THE CONTRACTOR SHALL CEASE WORK AND NOTIFY THE ENGINEER AT ONCE.
5. THE TYPICAL DETAILS SHOWN IN THESE PLANS SHALL APPLY IN ALL SIMILAR CASES UNLESS SPECIFICALLY NOTED OTHERWISE. WHERE NO DETAIL IS SHOWN, CONSTRUCTION SHALL BE AS INDICATED FOR OTHER SIMILAR WORK AND, OR APPLICABLE INDUSTRY PRACTICE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF INSTALLATION, INSPECTION, AND FINAL APPROVAL OF ALL UTILITIES.
7. IT IS NOT THE INTENT OF THESE CONTRACT DOCUMENTS TO SEPARATE THE WORK INTO SUBTRADE DIVISIONS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO DIVIDE THE WORK AND ORGANIZE ALL WORK AS REQUIRED TO COMPLETE THE WORK AS INTENDED BY THESE DOCUMENTS.
8. GENERAL DEMOLITION: WHENEVER EXISTING FACILITIES OR MATERIALS ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF WORK COVERED BY THE DRAWINGS AND SPECIFICATIONS, SAID FACILITIES AND MATERIALS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SAID FACILITIES OR MATERIALS SHALL BE EQUAL TO OR BETTER THAN THE ORIGINAL FACILITIES OR MATERIALS. THE FINISH PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE COUNTY AND ITS AGENTS.
9. NO WORK SHALL COMMENCE AT THE PROJECT SITE BEFORE A BUILDING PERMIT IS FULLY EXECUTED AND AVAILABLE FOR POSTING AT THE JOB SITE.
10. CONSTRUCTION LIMITS: CONTRACTOR AND SUB-CONTRACTORS, WORKERS AND OTHER PERSONNEL RELATED TO THIS SCOPE OF WORK, SHALL BE CONFINED WITH THE AREAS DESIGNATED AS CONSTRUCTION LIMITS AS INDICATED BY THESE DRAWINGS AND RELATED AREAS. AREAS BEYOND THIS SCOPE OF WORK SHALL BE OFF LIMITS, AND THEIR USE SHALL BE PROHIBITED WITHOUT PRIOR JURISDICTION AUTHORIZATION. THE GENERAL CONTRACTOR SHALL VERIFY THESE LIMITS AND BE RESPONSIBLE TO INFORM THE APPROPRIATE PERSONNEL AND ENFORCE THESE LIMITS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, FITTING, OR PATCHING THAT MAY BE REQUIRED TO COMPLETE THE INTENT OF THESE CONSTRUCTION DOCUMENTS, TO MAKE ITS SEVERAL PARTS FIT TOGETHER PROPERLY. THE CONTRACTOR SHALL PATCH FINISHES AS NECESSARY TO ACCOMPLISH WORK DEFINED IN THIS DRAWINGS.
12. U.O.N., DO NOT SCALE DRAWINGS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY MEASURES AT SITE.
14. CONTRACTOR TO LOCATE ALL UTILITY LINES PRIOR TO START OF WORK.



STEPPED FOUNDATION DETAIL
NTS

TABLE R902.3(1) FASTENING SCHEDULE			
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
Roof			
1	Blocking between ceiling joists or rafters to top plate	4-8d box (2 7/8" x 0.131") or 3-8d common (2 7/8" x 0.131") or 3-3" x 0.131" nails	Toe nail
2	Ceiling joists to top plate	4-8d box (2 7/8" x 0.131") or 3-8d common (2 7/8" x 0.131") or 3-3" x 0.131" nails	Per joist, toe nail
3	Ceiling joist not attached to parallel rafter, laps over partition (see Section R902.3.1, R902.3.2 and Table R902.3.10)	4-10d box (3" x 0.128") or 3-10d common (3" x 0.128") or 3-3" x 0.131" nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Section R902.3.1 and R902.3.2 and Table R902.3.10)	Table R902.5.10)	Face nail
5	Collar tie to rafter, face nailing 1/2" x 20 ga. ridge strap to rafter	4-10d box (3" x 0.128") or 4-10d common (3" x 0.148") or 4-3" x 0.131" nails	Face nail each rafter
6	Rafter or roof truss to plate	3-16d box nails (3 7/8" x 0.135") or 3-10d common nails (3" x 0.148") or 4-10d box (3" x 0.128") or 4-3" x 0.131" nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d (3 7/8" x 0.135") or 3-16d box (3 7/8" x 0.135") or 3-16d common (3 7/8" x 0.148") or 4-10d box (3" x 0.128") or 4-3" x 0.131" nails	End nail
Wall			
8	Stud to stud (not at braced wall panels)	16d common (3 7/8" x 0.162") or 10d box (3" x 0.128") or 7" x 0.131" nails	24" o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 7/8" x 0.162") or 10d box (3" x 0.128") or 7" x 0.131" nails	16" o.c. face nail
10	Build-up header (2" to 2 1/2" header with 1/2" spacers)	16d common (3 7/8" x 0.162") or 10d box (3" x 0.128")	16" o.c. each edge face nail
11	Continuous header to stud	8-16d common (3 7/8" x 0.135") or 12-16d box (3 7/8" x 0.135") or 12-10d box (3" x 0.128") or 12-3" x 0.131" nails	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
12	Top plate to top plate	16d common (3 7/8" x 0.162") or 10d box (3" x 0.128") or 3" x 0.131" nails	16" o.c. face nail
13	Double top plate splice for SDCs A-D, with seismic braced wall line spacing < 25'	8-16d common (3 7/8" x 0.162") or 12-16d box (3 7/8" x 0.135") or 12-10d box (3" x 0.128") or 12-3" x 0.131" nails	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
<i>(continued)</i>			

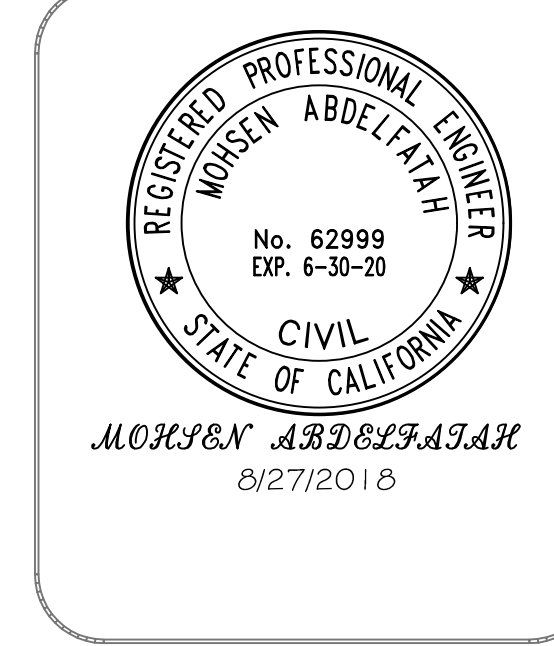
TABLE R902.3(1)—continued FASTENING SCHEDULE			
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER**	SPACING AND LOCATION
14	Bottom plate to post, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 7/8" x 0.162") or 10d box (3" x 0.128") or 3" x 0.131" nails	16" o.c. face nail
15	Bottom plate to post, rim joist, band joist or blocking (at braced wall panels)	3-16d box (3 7/8" x 0.135") or 2-16d common (3 7/8" x 0.162") or 4-3" x 0.131" nails	12" o.c. face nail 3 each 16" o.c. face nail 2 each 16" o.c. face nail 4 each 16" o.c. face nail
16	Top or bottom plate to stud	4-8d box (2 7/8" x 0.135") or 3-16d box (3 7/8" x 0.135") or 4-8d common (2 7/8" x 0.131") or 4-10d box (3" x 0.128") or 4-3" x 0.131" nails	Toe nail
17	Top plates, laps at corners and intersections	3-16d box (3 7/8" x 0.128") or 2-16d common (3 7/8" x 0.162") or 3-3" x 0.131" nails	End nail
18	1" brace to each stud and plate	3-8d box (2 7/8" x 0.135") or 2-8d common (2 7/8" x 0.131") or 2-10d box (3" x 0.128") or 2-steps, 1/2"	Face nail
19	1" x 6" sheathing to each bearing	3-8d box (2 7/8" x 0.135") or 2-8d common (2 7/8" x 0.131") or 2-10d box (3" x 0.128") or 2-steps, 1" crown, 16 ga., 1/2" long	Face nail
20	1" x 8" and wider sheathing to each bearing	3-8d box (2 7/8" x 0.135") or 3-8d common (2 7/8" x 0.131") or 3-10d box (3" x 0.128") or 4-steps, 1" crown, 16 ga., 1/2" long	Face nail
Floor			
21	Joist to sill, top plate or girder	4-8d box (2 7/8" x 0.135") or 3-8d common (2 7/8" x 0.131") or 3-3" x 0.131" nails	Toe nail
22	Rim joist, band joist or blocking to sill or top plate (roof applications also)	8d box (2 7/8" x 0.131") or 8d common (2 7/8" x 0.131") or 10d box (3" x 0.128") or 4-steps, 1" crown, 16 ga., 1/2" long	4" o.c. toe nail 6" o.c. toe nail
23	1" x 6" subfloor or less to each joist	3-8d box (2 7/8" x 0.135") or 3-8d common (2 7/8" x 0.131") or 3-10d box (3" x 0.128") or 2-steps, 1" crown, 16 ga., 1/2" long	Face nail
<i>(continued)</i>			

TABLE R902.3(1) FASTENING SCHEDULE—continued				
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER**	SPACING AND LOCATION	
24	2" subfloor to joist or girder	3-16d box (3 7/8" x 0.135") or 2-16d common (3 7/8" x 0.162")	Blind and face nail	
25	2" planks (plank & beam—floor & roof)	3-16d box (3 7/8" x 0.135") or 2-16d common (3 7/8" x 0.162")	At each bearing, face nail	
26	Band or rim joist to post	3-16d common (3 7/8" x 0.162") or 4-10 box (3" x 0.128") or 4-3" x 0.131" nails or 4-3" x 14 ga. staples, 7/8" crown	End nail	
27	Built-up girders and beams, 2-inch lumber lags	20d common (4 7/8" x 0.192") or 10d box (3" x 0.128") or 3" x 0.131" nails	Nail each layer as follows: 32" o.c. at top and bottom and staggered. 24" o.c. face nail at top and bottom staggered on opposite sides	
28	Ledger strip supporting joists or rafters	4-16d box (3 7/8" x 0.135") or 3-16d common (3 7/8" x 0.162") or 4-3" x 0.131" nails	At each joist or rafter, face nail	
29	Bridging to joist	2-10d (3" x 0.128")	Each end, toe nail	
Wood structural panels, subfloor, roof and exterior wall sheathing to framing and particleboard wall sheathing to framing (see Table R902.3(2) for wood structural panel exterior wall sheathing to wall framing)				
			Edges (Inches)	
			Intermediate supports* (Inches)	
30	1/2" - 1/2"	16d common (3 7/8" x 0.131") nail (toe), or 8d common nail (2 7/8" x 0.131")	6	12"
31	3/4" - 1"	16d common (3 7/8" x 0.148") nail, or 8d (2 7/8" x 0.131") deformed nail	6	12"
32	1 1/4" - 1 1/2"	16d common (3 7/8" x 0.148") nail, or 8d (2 7/8" x 0.131") deformed nail	6	12"
Other wall sheathing*				
33	1/2" structural cellulose fiberboard sheathing	1 1/2" galvanized roofing nail, 1/2" head diameter, or 1" crown staple 16 ga., 1 1/2" long	3	6
34	3/4" structural cellulose fiberboard sheathing	1 1/2" galvanized roofing nail, 1/2" head diameter, or 1" crown staple 16 ga., 1 1/2" long	3	6
35	1/2" gypsum sheathing	1 1/2" galvanized roofing nail, single galvanized, 1 1/2" long, 1/2" screws, Type W or S	7	7
36	1/2" gypsum sheathing	1 1/2" galvanized roofing nail, single galvanized, 1 1/2" long, 1 1/2" screws, Type W or S	7	7
Wood structural panels, combination subfloor and roof/ceiling to framing				
37	1/2" and less	8d deformed (2 7/8" x 0.120") nail, or 8d common (2 7/8" x 0.131") nail, or 1 1/2" - 1"	6	12"
38	3/4" - 1"	8d common (2 7/8" x 0.131") nail, or 8d deformed (2 7/8" x 0.120") nail	6	12"
39	1 1/4" - 1 1/2"	10d common (3" x 0.148") nail, or 8d deformed (2 7/8" x 0.120") nail	6	12"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s, 1 ksi = 6.895 MPa.

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PROJECT
NEW EVAN'S RESIDENCE
6173 VALLEY VIEW DRIVE
OAKLAND, CA
GENERAL NOTES



REVISION		
NO.	DATE	BY

SCALE: AS SHOWN
DATE: 8/27/2018

S-6

SHEAR WALL NOTES

ALL SHEAR WALLS TO HAVE DF-L FRAMING AT 16" OC MAX.

INTERIOR SHEAR WALLS SHALL BE CONTINUOUS FROM THE UNDERSIDE OF THE ROOF SHEATHING TO THE FOUNDATION.

ALL STRAPS SHOWN ARE MANUFACTURED BY "SIMPSON". OTHER STRAPS MAY BE USED PROVIDED THEY ARE ICBO LISTED.

INSTALLATION OF ALL ANCHORS AND STRAPS SHALL BE TO THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

PROVIDE SHEATHING EDGE NAILING ALONG STUDS CONNECTED TO HOLDDOWN ANCHORS OR STRAPS.

"SIMPSON" STD144 4 5THD14RJ MUST HAVE #4 BAR PASSING THRU THE SHEAR CONE IN THE EMBEDDED SECTION OF THE STRAPS.

"SIMPSON" STD144 4 5THD14RJ MUST BE AT LEAST 1 1/2" FROM THE CORNER OF THE WALL.

"SIMPSON" HD2A HOLDOWNS REQUIRE A "SIMPSON" 55TB16 ANCHOR BOLT (FRAMED WALL ON CONCRETE CONDITION) OR 5/8" DIA. A307 BOLT EPOXIED WITH "SIMPSON" ET22 (WOOD FLOOR ON CONCRETE WALL

"SIMPSON" HD8A HOLDOWNS REQUIRE A "SIMPSON" 55TB28 ANCHOR BOLT (FRAMED WALL ON CONCRETE CONDITION) OR 7/8" DIA. A307 BOLT EPOXIED WITH "SIMPSON" ET22 (WOOD FLOOR ON CONCRETE WALL

"SIMPSON" HD10A HOLDOWNS REQUIRE A "SIMPSON" 55TB28 ANCHOR BOLT (FRAMED WALL ON CONCRETE CONDITION) OR 7/8" DIA. A307 BOLT EPOXIED WITH "SIMPSON" ET22 (WOOD FLOOR ON CONCRETE WALL

"SIMPSON" CS150 MAY BE REPLACED WITH FTA OR LFTA STRAPS OF EQUAL STRENGTH.

NO SHEATHING OR SIDING JOINTS SHALL BE ALLOWED AT HORIZONTAL FRAMING JOINTS. SHEATHING/SIDING SHALL BE CONTINUOUS ACROSS ALL HORIZONTAL FRAMING JOINTS.

WOOD TRUSS NOTES

1) DESIGN LOADS FOR WOOD ROOF TRUSSES ARE AS FLOWS:

TOP CHORD LIVE LOAD:	20 PSF
TOP CHORD DEAD LOAD:	8 PSF
BOTTOM CHORD LIVE LOAD:	0 PSF
BOTTOM CHORD DEAD LOAD:	7 PSF
TOTAL DESIGN LOAD:	35 PSF

2) DESIGN LOADS FOR WOOD FLOOR TRUSSES ARE AS FLOWS:

LIVE LOAD:	40 PSF
DEAD LOAD:	15 PSF
TOTAL DESIGN LOAD:	55 PSF

3) FABRICATION OF THE TRUSSES SHALL BE IN COMPLIANCE WITH CRC SECTION 2306.1.

4) ALL DIMENSIONS SHALL BE VERIFIED PRIOR TO FABRICATION.

5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE TRUSSES IN STRICT COMPLIANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS OF THE TRUSS MANUFACTURER. NO WEB OR CHORD MEMBERS SHALL BE MODIFIED IN THE FIELD.

PROVIDE TRIPLE STUDS OR 4x4 POST UNDER ALL BEARING POINT OF GIRDER TRUSSES UNLESS NOTED ON PLANS.

7) PLACE 2x4 FLAT OUTRIGGERS ON GABLE ENDS AT 32" OC OR 24" OC IF OVERHANG IS GREATER THAN 24"

8) PROVIDE HEAVY LOAD TRUSS HANGERS WHERE TRUSSES HANG ON GIRDER TRUSSES OR BEAMS ("SIMPSON" OR EQ.)

9) PROVIDE "SIMPSON" T522 (OR SIMILAR) WHERE GIRDER TRUSSES AND BEAMS REST ON TOP PLATES.

10) PROVIDE CONTINUOUS BLOCKING BETWEEN THE ROOF TRUSSES AT THE RIDGE LINE - 2x4 BLOCKING AT 2x4 TOP CHORDS AND 2x6 BLOCKING AT 2x6 TOP CHORDS.

FRAMING NOTES

1) ALL WORK AND MATERIALS SHALL BE IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE 2016 CRC AND 2016 CBC AND ALL LOCAL ORDINANCES.

2) ALL EXTERIOR AND LOAD BEARING WALLS TO HAVE DOUBLE TOP PLATES. STAGGER SPLICES 48" MIN. WITH (1 1) 16d NAILS BETWEEN SPLICES.

3) ALL DIMENSIONAL LUMBER TO BE DOUGLAS FIR LARCH NO. 2 OR BETTER UNLESS OTHERWISE NOTED.

4) ALL HEADERS TO BE DF-L NO. 2 GRADE (MAX. 9" SPLIT).

5) ALL WOOD CONNECTORS MUST CARRY THE CAPACITY OF THE MEMBER. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTIONS. IF OTHER THAN STANDARD CONNECTIONS ARE REQUIRED, CONTACT THE PROJECT ENGINEER FOR ASSISTANCE. USE "SIMPSON" OR OTHER ICBO LISTED CONNECTIONS.

6) ALL WOOD CONNECTORS SHALL BE INSTALLED WITH REQUIRED FASTENERS IN COMPLIANCE WITH THEIR LISTING.

7) ALL WOOD MEMBERS SHALL BE FASTENED TOGETHER IN COMPLIANCE WITH 2016 C.R.C. TABLE 2304.10.1 UNLESS OTHERWISE NOTED.

8) GLU-LAM BEAMS SHALL BE 24F-V4 DF/DF OR EQUAL FOR SIMPLE SPANS, AND 24F-V8 DF/DF FOR CONTINUOUS SPANS.

9) ENDS OF ALL GLU-LAM BEAMS SHALL BE ADEQUATELY RESTRAINED.

A.I.T.C. CERTIFICATES FOR GLU-LAM BEAMS SHALL BE PROVIDED TO THE BUILDING DEPARTMENT.

11) ALL COLUMNS SHALL EXTEND DOWN THROUGH THE STRUCTURE TO THE FOUNDATION. ALL COLUMNS SHALL BE BRACED AT ALL FLOOR LEVELS. COLUMNS SHALL BE THE SAME WIDTH AS THE MEMBER THAT THEY ARE SUPPORTING.

12) TJS MUST BE INSTALLED IN STRICT COMPLIANCE WITH THEIR LISTING.

FOUNDATION NOTES

1) ALL WORK SHALL CONFORM TO THE 2016 CBC AND 2016 CRC., ACI 318 AND ALL

2) ALL REINFORCING STEEL TO BE ASTM A615 GR. 40.

3) ALL ANCHOR BOLTS TO BE ASTM A36. (CONCRETE CONTRACTOR TO PROVIDE ALL NUTS, BOLTS, AND WASHERS).

4) ALL ANCHOR BOLTS FOR SILL PLATES AT EXTERIOR WALLS TO HAVE 7" MIN. EMBEDMENT AND "SIMPSON" BP1/2 (OR EQUAL) BEARING PLATE AT 6'-0" O.C. MAXIMUM AS REQUIRED BY SHEAR WALLS. A MINIMUM OF TWO BOLTS ARE REQUIRED AT EACH WALL SECTION AND SHALL BE PLACED A MINIMUM OF ONE FOOT FROM EACH WALL END. SEE SHEAR WALL SCHEDULE FOR REQUIRED ANCHOR BOLT SPACING AT THE SHEAR WALL PANELS. ALL INTERIOR PARTITIONS SHALL BE SECURED W/ "SIMPSON" DN72 OR APPROVED EQUAL POWER ACTUATED PINS AT 32" O.C. INSTALL PINS TO THE MANUFACTURER'S SPECIFICATIONS AND SHALL BE INSTALLED AT CONCRETE SLAB CONSTRUCTION ONLY.

5) ALL LOAD BEARING FOOTINGS SHALL BE A MINIMUM OF 12" BELOW NATURAL GRADE AT SINGLE STORY STRUCTURES AND A MINIMUM OF 18" BELOW GRADE AT TWO STORY STRUCTURES. ALL FOOTINGS MUST BEAR ON UNDISTURBED SOIL.

6) PROVIDE CORNER BARS TO MATCH CONTINUOUS STEEL. ALL REINFORCING STEEL TO LAP A MINIMUM OF 24" AT SPLICES.

7) ADJACENT GROUND SURFACES SHALL BE SLOPED AWAY FROM STRUCTURE.

8) DRAINAGE OF SURROUNDING AREA SHALL ALSO BE PROVIDED TO PREVENT ACCUMULATION OF SURFACE WATER.

9) FASTENERS USED IN FOUNDATION SHALL BE CORROSION RESISTANT.

10) ALL MATERIAL SIZES, GRADES AND CONSTRUCTION DETAILS SHOULD BE VERIFIED TO MEET JOB CONDITIONS.

11) ALL WELDED WIRE MESH TO BE ASTM A185.

12) ASSUMED SOIL BEARING PRESSURE = 1500 PSF/ OR AS INDICATED IN SOIL REPORT

13) MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH TO BE 2,500 PSI AT 28 DAYS. MAXIMUM AGGREGATE SIZE IS 1". MAXIMUM AIR ENTRAINMENT IS 3%. CEMENT TO BE TYPE I OR TYPE II.

14) REFER TO FINAL SOILS REPORT FOR CONCRETE FOUNDATION AND SOILS PREPARATION. THE SOILS ENGINEER SHALL INSPECT AND VERIFY ALL FOOTING CONDITIONS.

15) PRIOR TO PLACEMENT OF CONCRETE - FINISH FLOOR SLAB ELEVATION SHALL BE EQUAL TO 6" MINIMUM TO 8" MAXIMUM ABOVE FINISH GRADE - TYPICAL UNLESS NOTED OTHERWISE.

16) SEE THE FINAL PRECISE GRADING PLANS FOR ANY SPECIAL CONDITIONS THAT MAY AFFECT FOUNDATION DESIGNS. SOILS ENGINEER SHALL VERIFY THESE CONDITIONS.

17) LOCATE AND EXPOSE ALL PROPERTY CORNERS AND STRING SIDE YARD PROPERTY LINES PRIOR TO THE FOUNDATION INSPECTION.

18) PORCHES AND PATIO SLABS SHALL BE MIN. 1/2" BELOW RESIDENCE FINISHED FLOOR AT ALL DOOR THRESHOLDS.

STAIRS DETAILS:

1- STAIRWAY HANDRAILS SHALL NOT PROJECT MORE THAN 3-3/4" INTO REQUIRED WIDTH. STRINGERS AND OTHER PROJECTION SUCH AS TRIM AND SIMILAR DECORATIVE FEATURES MAY PROJECT INTO REQUIRED WIDTH 1-1/2" FROM EACH SIDE. (CRC)

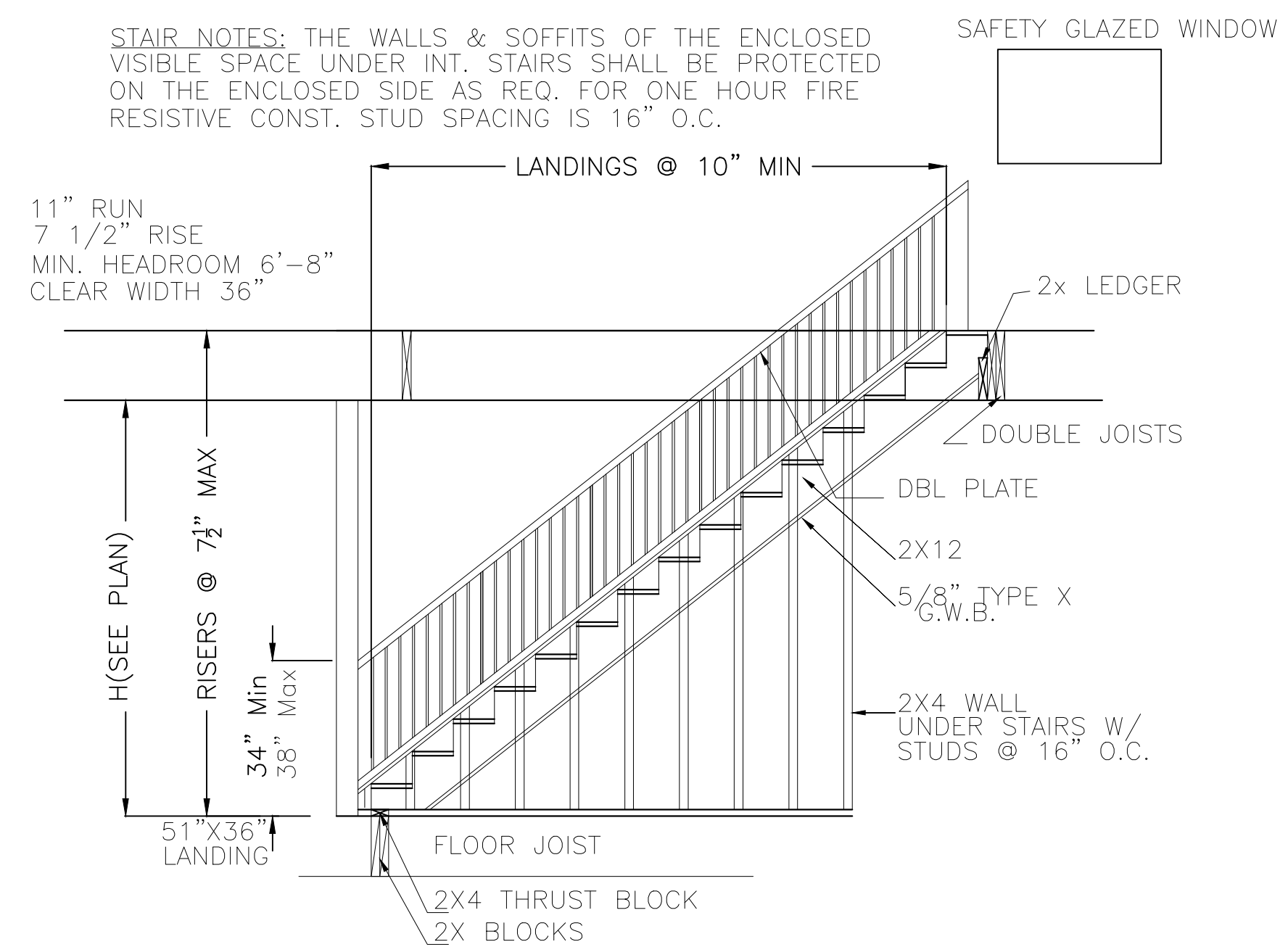
2- THE APPROACH AND ALL TREADS OF EXTERIOR STAIRS SHALL BE MARKED WITH A STRIP OF CLEARLY CONTRASTING COLOR A MINIMUM OF 2" IN WIDTH AND MAXIMUM OF 1" FROM THE TREAD NOSE OR LANDING. THE STRIP SHALL BE AT LEAST AS SLIP RESISTANT AS THE OTHER TREAD OF THE STAIRS.

3- HANDRAIL SHALL HAVE INTERMEDIATE RAILS OR AN ORNAMENTAL PATTERN SUCH THAT A SPHERE OF 4" IN DIAMETER CANNOT PASS THROUGH.

4- THE TRIANGLE OPENINGS FORMED BY THE RISER, TREAD AND BOTTOM ELEMENT OF A GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY MAY BE OF SUCH SIZE THAT A SPHERE 6" IN DIAMETER CANNOT PASS THROUGH.

5- THE HANDGRIP PORTION OF HANDRAIL SHALL NOT BE LESS THAN 1-1/4" OR MORE THAN 2" IN CROSS SECTIONAL DIMENSION.

6- HANDRAILS SHALL EXTEND A MINIMUM OF TREAD WIDTH PLUS 12" BEYOND THE BOTTOM NOSING. THE HANDRAIL SHALL CONTINUE TO SLOPE FOR A DISTANCE OF THE WIDTH OF ONE TREAD; THE REMAINDER OF THE REQUIRED EXTENSION IS HORIZONTAL BEFORE BEING RETURNED (TITLED 24 DISABLED ACCESS REQUIREMENT)



STAIRS DETAIL

SCALE 3/8"=1'

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PROJECT

NEW EVAN'S RESIDENCE
6173 VALLEY VIEW DRIVE
OAKLAND, CA

STRUCTURE NOTES



MOHAMED ABDELKHALIK
8/27/2018

REVISION

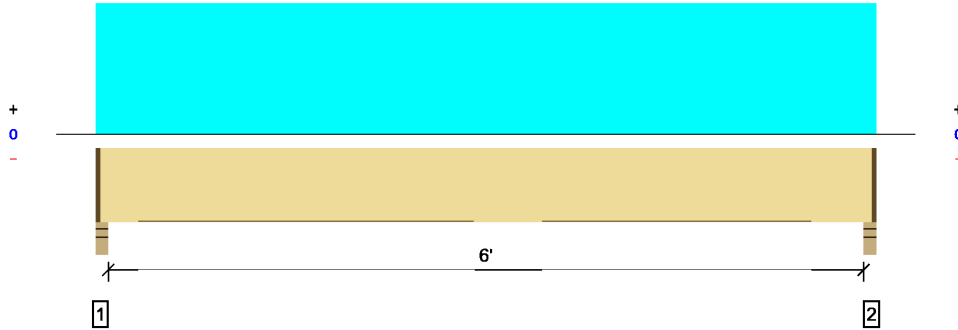
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SCALE	DATE
AS SHOWN	8/27/2018

S-7

01: Level 2			
Member Name	Results	Current Solution	Comments
balcony joist	Passed	1 Piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC	
Balcony Drop Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
garage: Joist	Passed	1 Piece(s) 16" TJI® 360 @ 16" OC	
2nd floor Joists	Passed	1 Piece(s) 11 7/8" TJI® 230 @ 24" OC	
2nd Floor: Drop Beam	Passed	1 Piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL	
closet Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
02: Level 1			
Member Name	Results	Current Solution	Comments
1st floor joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
03: Roof			
Member Name	Results	Current Solution	Comments
Roof: Joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
Roof: ridge Beam	Passed	1 Piece(s) 3 1/2" x 14" 2.0E Parallam® PSL	

Forte Software Operator	Job Notes
mohsen abdel fatah Advanced Engineering Service (209) 483-2539 advancedengineering@comcast.net	Evan's Family New Residence 6173 Valley View Dr Oakland, CA

1 piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC
Overall Length: 6' 7"


All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	606 @ 2' 1/2"	1434 (2.25")	Passed (42%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	424 @ 1' 3/4"	1665	Passed (25%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	903 @ 3' 3 1/2"	2255	Passed (40%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.023 @ 3' 3 1/2"	0.154	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.037 @ 3' 3 1/2"	0.308	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

 System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 6' 7"	24"	35.0	60.0	Residential - Living Areas

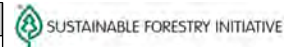
Member Notes

Balcony joist

Weyerhaeuser Notes

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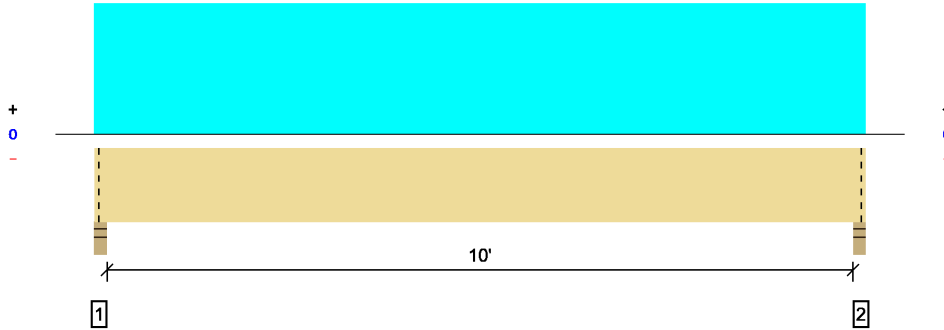
The product application, input design loads, dimensions and support information have been provided by M. Abdelfatah, P.E.



Forte Software Operator	Job Notes
mohsen abdelatah Advanced Engineering Service (209) 483-2539 advancedengineering@comcast.net	Evan's Family New Residence 6173 Valley View Dr Oakland, CA

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beam design.4te

Overall Length: 10' 7"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1310 @ 2"	5206 (3.50")	Passed (25%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1005 @ 1' 2 3/4"	4725	Passed (21%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	3250 @ 5' 3 1/2"	6768	Passed (48%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.053 @ 5' 3 1/2"	0.342	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.087 @ 5' 3 1/2"	0.512	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

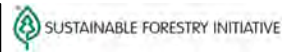
Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking
2 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 10' 7"	N/A	10.0		
1 - Uniform (PSF)	0 to 10' 7" (Front)	2' 6"	35.0	60.0	Residential - Living Areas

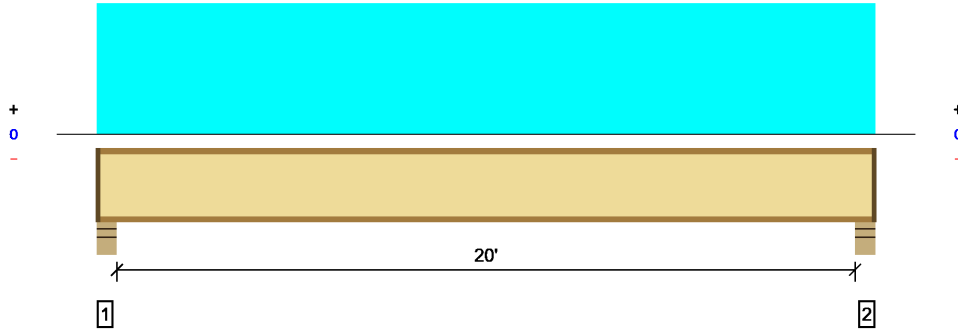
Member Notes
 Balcony drop beam

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Overall Length: 20' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1312 @ 4 1/2"	1505 (3.50")	Passed (87%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1267 @ 5 1/2"	2190	Passed (58%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	6439 @ 10' 5 1/2"	8405	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.361 @ 10' 5 1/2"	0.504	Passed (L/670)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.572 @ 10' 5 1/2"	1.008	Passed (L/423)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	48	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' 3" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 20' 9" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: None

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board
2 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 20' 11"	16"	35.0	60.0	Residential - Living Areas

Member Notes
 Garage joist

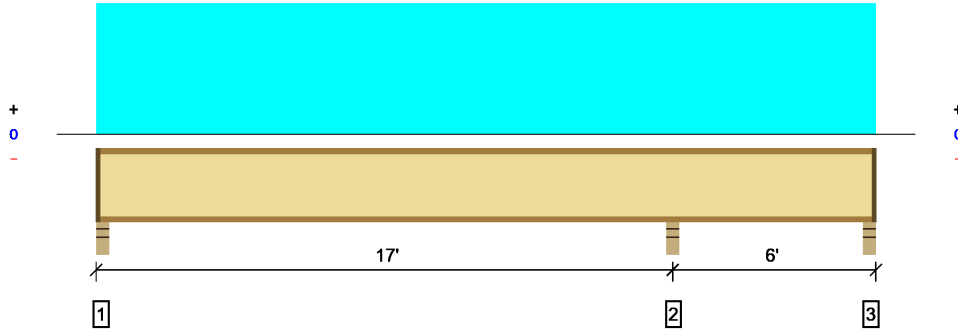
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Overall Length: 23'



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1833 @ 17"	2410 (3.50")	Passed (76%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	962 @ 16' 10 1/4"	1821	Passed (53%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-2837 @ 17"	4215	Passed (67%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.231 @ 7' 9 5/8"	0.420	Passed (L/871)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.299 @ 7' 9 1/2"	0.840	Passed (L/674)	--	1.0 D + 1.0 L (Alt Spans)
TJ-Pro™ Rating	42	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 6" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' o/c unless detailed otherwise.
- -392 lbs uplift at support 22' 8 1/4". Strapping or other restraint may be required.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 5/8" Gypsum ceiling, bridging or blocking at max. 8' o.c..

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.75"	168	563	731	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	3.50"	3.50"	423	1410	1833	None
3 - Stud wall - SPF	3.50"	2.25"	1.75"	-39	233/-354	233/-393	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 23'	24"	12.0	40.0	Residential - Living Areas

Member Notes

2nd Floor Joist

Weyerhaeuser Notes

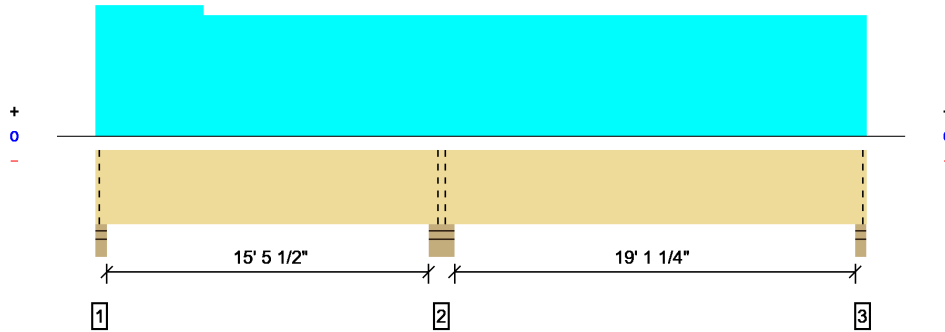
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1 piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL
Overall Length: 35' 7 3/4"


All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	11469 @ 16'	15619 (7.00")	Passed (73%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	5441 @ 17' 2 3/4"	14273	Passed (38%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	-20781 @ 16'	33694	Passed (62%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.375 @ 26' 7 7/16"	0.651	Passed (L/625)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.771 @ 26' 9 3/8"	0.976	Passed (L/304)	--	1.0 D + 1.0 Lr (Alt Spans)

 System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 35' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 35' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Roof Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	1655	369/-66	1459	3483/-66	Blocking
2 - Stud wall - SPF	7.00"	7.00"	5.14"	6338	913	5132	12383	Blocking
3 - Stud wall - SPF	3.00"	3.00"	1.83"	2209	342/-32	1881	4432/-32	Blocking

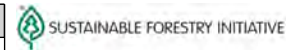
- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	0 to 35' 7 3/4"	N/A	18.5			
1 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	1'	12.0	40.0	-	Residential - Living Areas
2 - Uniform (PSF)	0 to 5' (Front)	1'	23.0	20.0	-	Additional LL & DL for balcony LL=60 DL=35
3 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	11' 6"	15.0	-	20.0	
4 - Uniform (PLF)	0 to 35' 7 3/4" (Front)	N/A	80.0	-	-	Wall weight

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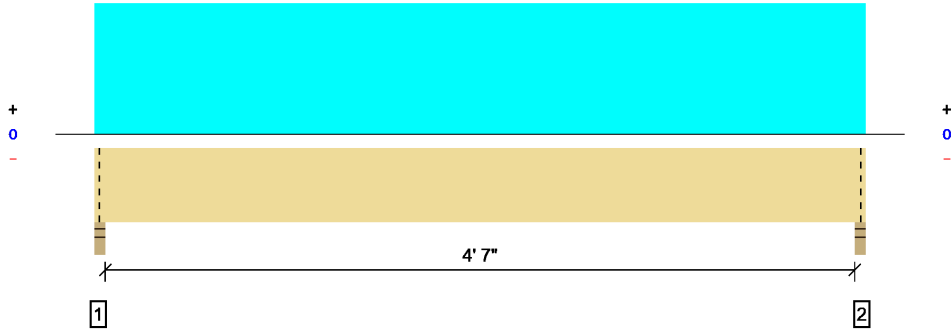
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Overall Length: 5' 1"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	686 @ 1' 1/2"	4463 (3.00")	Passed (15%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	366 @ 1' 2 1/4"	4725	Passed (8%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	788 @ 2' 6 1/2"	6768	Passed (12%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.003 @ 2' 6 1/2"	0.161	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.005 @ 2' 6 1/2"	0.242	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking
2 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking

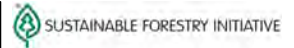
- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 1"	N/A	10.0		
1 - Uniform (PSF)	0 to 5' 1" (Front)	5'	12.0	40.0	Residential - Living Areas

Weyerhaeuser Notes

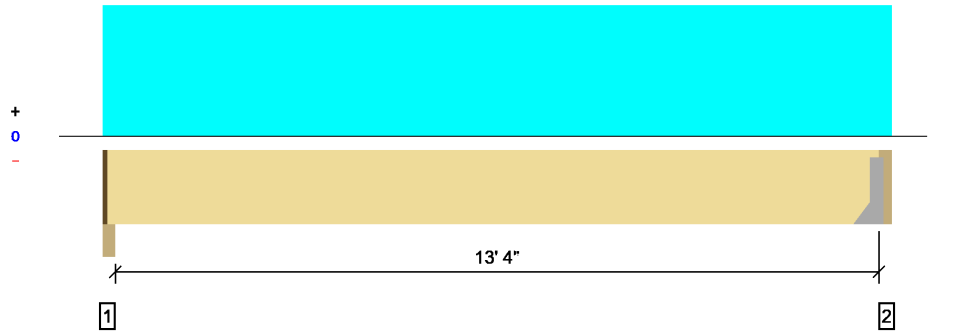
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Overall Length: 13' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	698 @ 13' 7 1/2"	1406 (1.50")	Passed (50%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	600 @ 12' 8 1/4"	2025	Passed (30%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2340 @ 6' 11"	3032	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.193 @ 6' 11"	0.335	Passed (L/835)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.251 @ 6' 11"	0.671	Passed (L/642)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 13' 6" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Ledger on masonry - DF	3.50"	2.25"	1.50"	166	553	719	1 1/4" Rim Board
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	168	560	728	See note ¹

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors						
Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	LUS28	1.75"	N/A	6-10d	3-10d	None

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 13' 11"	24"	12.0	40.0	Residential - Living Areas

Member Notes
1st floor joist

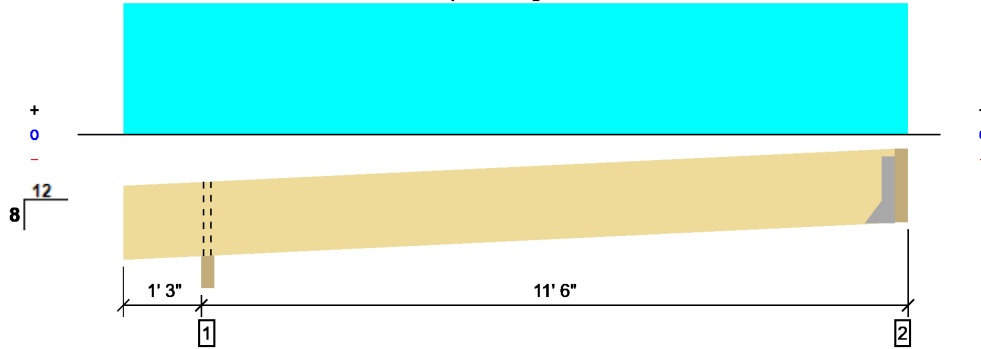
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1 piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC

Overall Sloped Length: 15' 11 3/8"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	416 @ 12' 5 1/2"	1406 (1.50")	Passed (30%)	--	1.0 D + 1.0 Lr (Alt Spans)
Shear (lbs)	357 @ 2' 3 7/8"	2531	Passed (14%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	1136 @ 6' 11 7/8"	3790	Passed (30%)	1.25	1.0 D + 1.0 Lr (Alt Spans)
Live Load Defl. (in)	0.063 @ 6' 11 5/16"	0.443	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.119 @ 6' 11 3/8"	0.665	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)

 System : Roof
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 8/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Overhang deflection criteria: LL (2L/360) and TL (2L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 15' o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 15' o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Beveled Plate - SPF	3.50"	3.50"	1.50"	253	281	534	Blocking
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	205	231	436	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors						
Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	

Loads	Location (Side)	Spacing	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
1 - Uniform (PSF)	0 to 12' 9"	24"	15.0	20.0	Roof

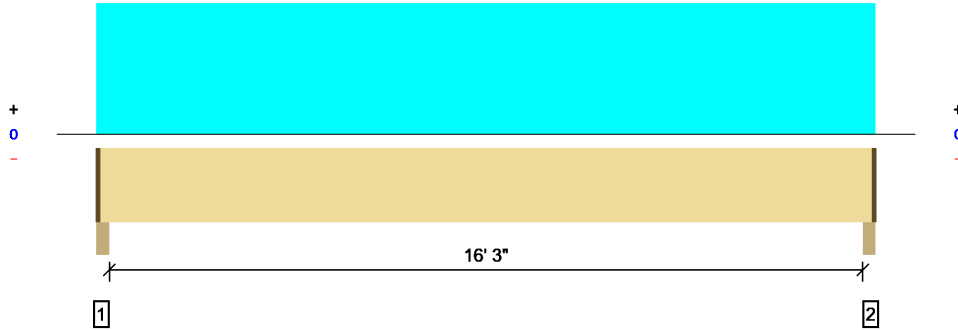
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Overall Length: 16' 10"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3473 @ 2"	4922 (2.25")	Passed (71%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	2907 @ 1' 5 1/2"	11842	Passed (25%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	14218 @ 8' 5"	33952	Passed (42%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.258 @ 8' 5"	0.550	Passed (L/767)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.469 @ 8' 5"	0.825	Passed (L/422)	--	1.0 D + 1.0 Lr (All Spans)

System : Roof
 Member Type : Flush Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 0/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 16' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 16' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board
2 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	1 1/4" to 16' 8 3/4"	N/A	15.3		
1 - Uniform (PSF)	0 to 16' 10" (Front)	11' 6"	15.0	20.0	Roof

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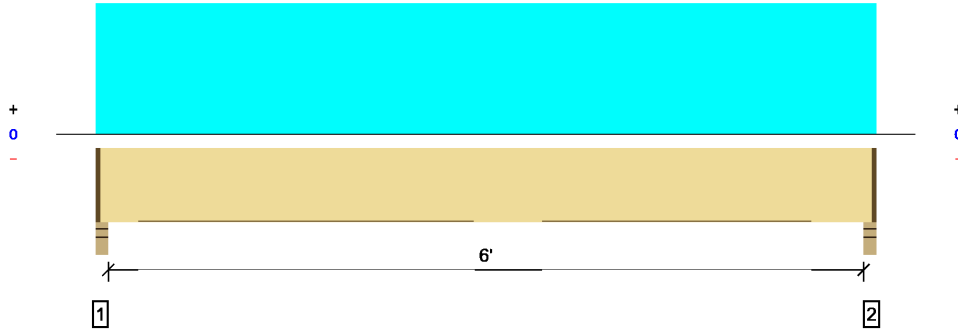
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01: Level 2			
Member Name	Results	Current Solution	Comments
balcony joist	Passed	1 Piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC	
Balcony Drop Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
garage: Joist	Passed	1 Piece(s) 16" TJI® 360 @ 16" OC	
2nd floor Joists	Passed	1 Piece(s) 11 7/8" TJI® 230 @ 24" OC	
2nd Floor: Drop Beam	Passed	1 Piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL	
closet Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
02: Level 1			
Member Name	Results	Current Solution	Comments
1st floor joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
03: Roof			
Member Name	Results	Current Solution	Comments
Roof: Joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
Roof: ridge Beam	Passed	1 Piece(s) 3 1/2" x 14" 2.0E Parallam® PSL	

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1 piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC
Overall Length: 6' 7"


All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	606 @ 2' 1/2"	1434 (2.25")	Passed (42%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	424 @ 1' 3/4"	1665	Passed (25%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	903 @ 3' 3 1/2"	2255	Passed (40%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.023 @ 3' 3 1/2"	0.154	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.037 @ 3' 3 1/2"	0.308	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

 System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 6' 7"	24"	35.0	60.0	Residential - Living Areas

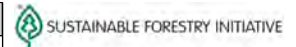
Member Notes

Balcony joist

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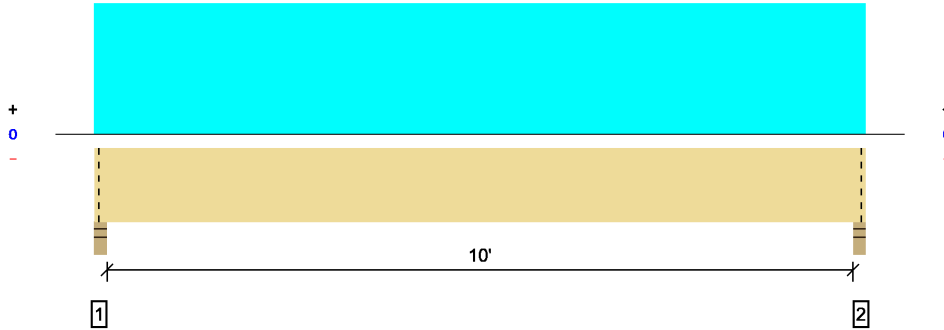
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Overall Length: 10' 7"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1310 @ 2"	5206 (3.50")	Passed (25%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1005 @ 1' 2 3/4"	4725	Passed (21%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	3250 @ 5' 3 1/2"	6768	Passed (48%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.053 @ 5' 3 1/2"	0.342	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.087 @ 5' 3 1/2"	0.512	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking
2 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 10' 7"	N/A	10.0		
1 - Uniform (PSF)	0 to 10' 7" (Front)	2' 6"	35.0	60.0	Residential - Living Areas

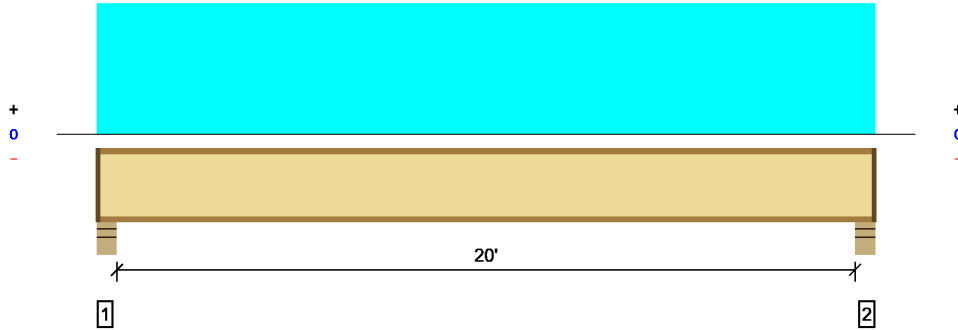
Member Notes
 Balcony drop beam

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Overall Length: 20' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1312 @ 4 1/2"	1505 (3.50")	Passed (87%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1267 @ 5 1/2"	2190	Passed (58%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	6439 @ 10' 5 1/2"	8405	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.361 @ 10' 5 1/2"	0.504	Passed (L/670)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.572 @ 10' 5 1/2"	1.008	Passed (L/423)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	48	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' 3" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 20' 9" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: None

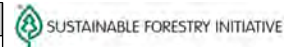
Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board
2 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 20' 11"	16"	35.0	60.0	Residential - Living Areas

Member Notes
Garage joist

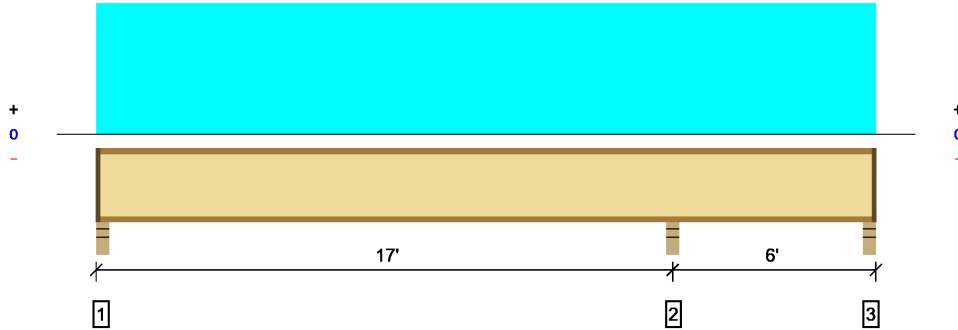
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Overall Length: 23'



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1833 @ 17"	2410 (3.50")	Passed (76%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	962 @ 16' 10 1/4"	1821	Passed (53%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-2837 @ 17"	4215	Passed (67%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.231 @ 7' 9 5/8"	0.420	Passed (L/871)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.299 @ 7' 9 1/2"	0.840	Passed (L/674)	--	1.0 D + 1.0 L (Alt Spans)
TJ-Pro™ Rating	42	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 6" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' o/c unless detailed otherwise.
- -392 lbs uplift at support 22' 8 1/4". Strapping or other restraint may be required.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 5/8" Gypsum ceiling, bridging or blocking at max. 8' o.c..

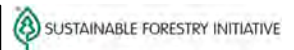
Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.75"	168	563	731	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	3.50"	3.50"	423	1410	1833	None
3 - Stud wall - SPF	3.50"	2.25"	1.75"	-39	233/-354	233/-393	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 23'	24"	12.0	40.0	Residential - Living Areas

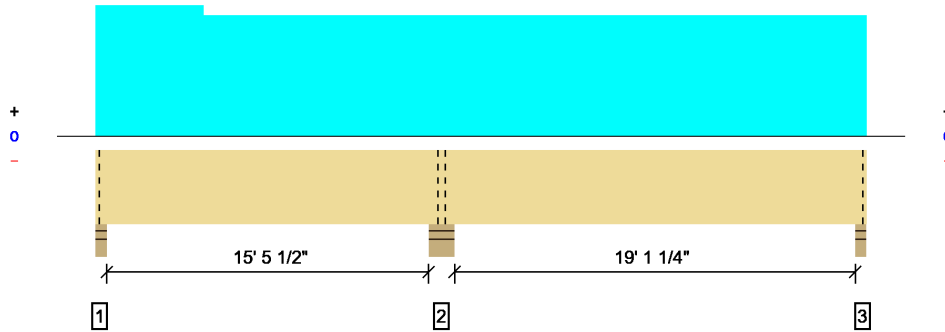
Member Notes
2nd Floor Joist

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1 piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL
Overall Length: 35' 7 3/4"


All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	11469 @ 16'	15619 (7.00")	Passed (73%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	5441 @ 17' 2 3/4"	14273	Passed (38%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	-20781 @ 16'	33694	Passed (62%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.375 @ 26' 7 7/16"	0.651	Passed (L/625)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.771 @ 26' 9 3/8"	0.976	Passed (L/304)	--	1.0 D + 1.0 Lr (Alt Spans)

 System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 35' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 35' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Roof Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	1655	369/-66	1459	3483/-66	Blocking
2 - Stud wall - SPF	7.00"	7.00"	5.14"	6338	913	5132	12383	Blocking
3 - Stud wall - SPF	3.00"	3.00"	1.83"	2209	342/-32	1881	4432/-32	Blocking

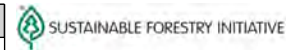
- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	0 to 35' 7 3/4"	N/A	18.5			
1 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	1'	12.0	40.0	-	Residential - Living Areas
2 - Uniform (PSF)	0 to 5' (Front)	1'	23.0	20.0	-	Additional LL & DL for balcony LL=60 DL=35
3 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	11' 6"	15.0	-	20.0	
4 - Uniform (PLF)	0 to 35' 7 3/4" (Front)	N/A	80.0	-	-	Wall weight

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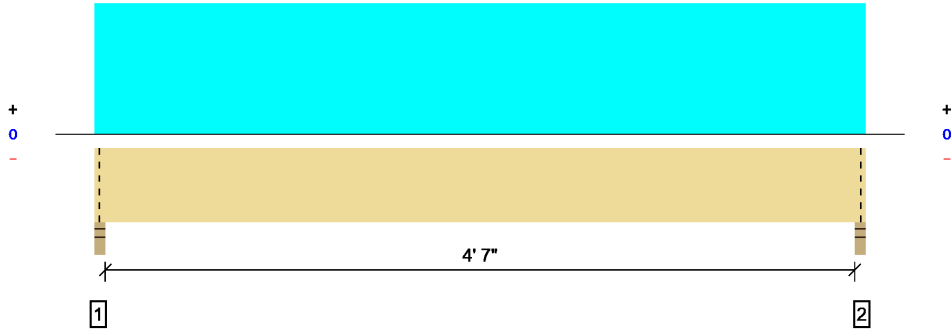
The product application, input design loads, dimensions and support information have been provided by M. Abdelfatah, P.E.



Forte Software Operator	Job Notes
mohsen abdelatah Advanced Engineering Service (209) 483-2539 advancedengineering@comcast.net	Evan's Family New Residence 6173 Valley View Dr Oakland, CA

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beam design.4te

Overall Length: 5' 1"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	686 @ 1' 1/2"	4463 (3.00")	Passed (15%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	366 @ 1' 2 1/4"	4725	Passed (8%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	788 @ 2' 6 1/2"	6768	Passed (12%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.003 @ 2' 6 1/2"	0.161	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.005 @ 2' 6 1/2"	0.242	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

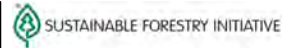
- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking
2 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 1"	N/A	10.0		
1 - Uniform (PSF)	0 to 5' 1" (Front)	5'	12.0	40.0	Residential - Living Areas

Weyerhaeuser Notes

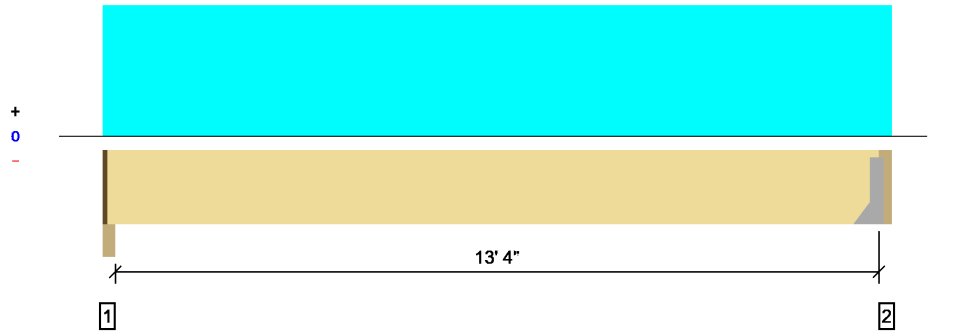


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Overall Length: 13' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	698 @ 13' 7 1/2"	1406 (1.50")	Passed (50%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	600 @ 12' 8 1/4"	2025	Passed (30%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2340 @ 6' 11"	3032	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.193 @ 6' 11"	0.335	Passed (L/835)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.251 @ 6' 11"	0.671	Passed (L/642)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 13' 6" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Ledger on masonry - DF	3.50"	2.25"	1.50"	166	553	719	1 1/4" Rim Board
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	168	560	728	See note ¹

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	LUS28	1.75"	N/A	6-10d	3-10d	None

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 13' 11"	24"	12.0	40.0	Residential - Living Areas

Member Notes

1st floor joist

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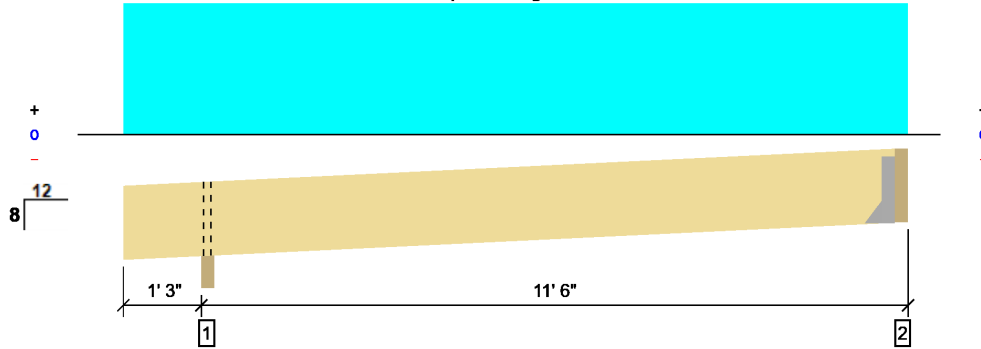


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1 piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC

Overall Sloped Length: 15' 11 3/8"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	416 @ 12' 5 1/2"	1406 (1.50")	Passed (30%)	--	1.0 D + 1.0 Lr (Alt Spans)
Shear (lbs)	357 @ 2' 3 7/8"	2531	Passed (14%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	1136 @ 6' 11 7/8"	3790	Passed (30%)	1.25	1.0 D + 1.0 Lr (Alt Spans)
Live Load Defl. (in)	0.063 @ 6' 11 5/16"	0.443	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.119 @ 6' 11 3/8"	0.665	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)

System : Roof
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 8/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Overhang deflection criteria: LL (2L/360) and TL (2L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 15' o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 15' o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Beveled Plate - SPF	3.50"	3.50"	1.50"	253	281	534	Blocking
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	205	231	436	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors						
Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	

Loads	Location (Side)	Spacing	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
1 - Uniform (PSF)	0 to 12' 9"	24"	15.0	20.0	Roof

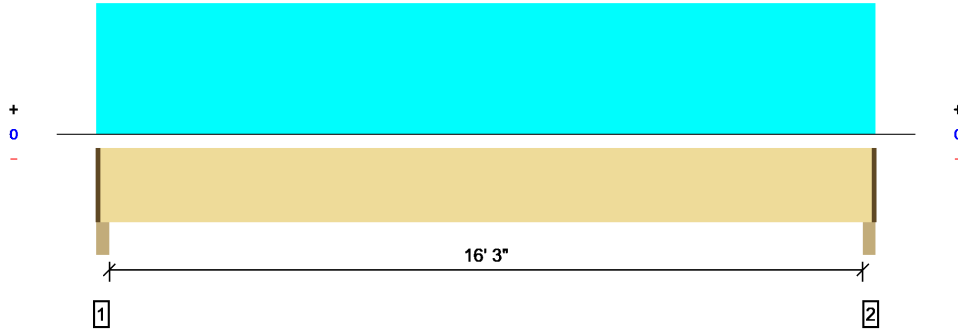
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Overall Length: 16' 10"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3473 @ 2"	4922 (2.25")	Passed (71%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	2907 @ 1' 5 1/2"	11842	Passed (25%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	14218 @ 8' 5"	33952	Passed (42%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.258 @ 8' 5"	0.550	Passed (L/767)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.469 @ 8' 5"	0.825	Passed (L/422)	--	1.0 D + 1.0 Lr (All Spans)

System : Roof
 Member Type : Flush Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 0/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 16' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 16' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board
2 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	1 1/4" to 16' 8 3/4"	N/A	15.3		
1 - Uniform (PSF)	0 to 16' 10" (Front)	11' 6"	15.0	20.0	Roof

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PROJECT
REVISION

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Pages 1 to 11

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REV	DATE	COMM.

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TABLE OF CONTENT

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	2-	TABLE OF CONTENT	CODE
		SCOPE OF WORK	NON-STRUCTURAL PROJECT INFORMATION
	3-	MAMPS	
	4-	STRUCTURAL INFORMATION	SEISMIC LOAD
	5-	SEISMIC MAP	
	6 -9-	WIND LOAD	
	10-	FOUNDATION PILE	
	11-	FOUNDATION PILE	
		ATTACHEMENT	
	*)	BEAM DESIGN	
	*)	RETAINING WALL	
	2016 CFC	2016 CALIFORNIA ENERGY CODE	
		2016 CALIFORNIA GREEN BUILDING STANDARD CODE	
		CITY OF OAKLAND MUNICIPAL CODE	

SCOPE OF WORK

1 NEW TWO FLOOR BUILDING

NON-STRUCTURAL INFORMATION

GENERAL USE	RESIDENTIAL
OCCUPANCY	A-3
TYPE OF CONSTRUCTION	VB
NUMBER OF FLOORS	1
FOUNDATION TYPE	SLAB ON GRADE & RAISED FLOOR
1st FLOOR PLATE HEIGHT	VARIES
2ND FLOOR PLATE HEIGHT	9 FT
SPRINKLERS SYSTEM	N
STRUCTURE MATERIAL TYPE	WOOD

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1st FLOOR PLATE HEIGHT	VARIES
2ND FLOOR PLATE HEIGHT	9 FT
SPRINKLERS SYSTEM	N
STRUCTURE MATERIAL TYPE	WOOD



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Cantilevered Retaining Wall

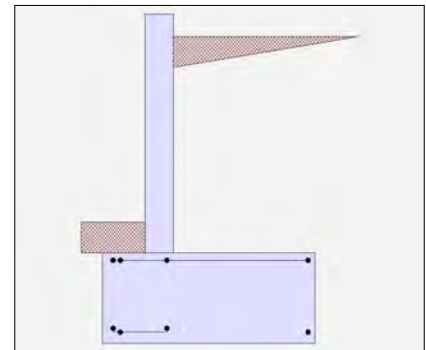
Code: IBC 2018, ACI 318-14, TMS 402-16

Criteria

Retained Height	=	4.75 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	8.10 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	1,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	32.0 psf/ft
	=	
Passive Pressure	=	250.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	68.00 pcf
Footings Soil Friction	=	0.300
Soil height to ignore for passive pressure	=	12.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem	=	0.0 psf (Service Level)

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type	=	Line Load
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Axial Load Applied to Stem

Axial Dead Load	=	316.0 lbs
Axial Live Load	=	360.0 lbs
Axial Load Eccentricity	=	0.0 in

Design Summary

Wall Stability Ratios

Overturning	=	6.52 OK
Sliding	=	2.75 OK
Total Bearing Load	=	4,489 lbs
...resultant ecc.	=	4.50 in
Soil Pressure @ Toe	=	1,301 psf OK
Soil Pressure @ Heel	=	494 psf OK
Allowable	=	1,500 psf
Soil Pressure Less Than Allowable		
ACI Factored @ Toe	=	1,822 psf
ACI Factored @ Heel	=	692 psf
Footing Shear @ Toe	=	1.3 psi OK
Footing Shear @ Heel	=	1.0 psi OK
Allowable	=	75.0 psi
Sliding Calcs		
Lateral Sliding Force	=	729.0 lbs
less 100% Passive Force	= -	769.5 lbs
less 100% Friction Force	= -	1,238.6 lbs
Added Force Req'd	=	0.0 lbs OK
....for 1.5 Stability	=	0.0 lbs OK

Stem Construction

Design Height Above Ftg		ft =	0.00
Wall Material Above "Ht"	=	Concrete	
Design Method	=	LRFD	
Thickness	=	8.00	
Rebar Size	=	# 5	
Rebar Spacing	=	16.00	
Rebar Placed at	=	Edge	
Design Data			
fb/FB + fa/Fa	=	0.148	
Total Force @ Section			
Service Level	lbs =		
Strength Level	lbs =	577.6	
Moment....Actual			
Service Level	ft-# =		
Strength Level	ft-# =	914.5	
Moment....Allowable	=	6,186.6	
Shear....Actual			
Service Level	psi =		
Strength Level	psi =	7.8	
Shear....Allowable	psi =	75.0	
Anet (Masonry)	in2 =		
Rebar Depth 'd'	in =	6.19	

Masonry Data

f'm	psi =	
Fs	psi =	
Solid Grouting	=	
Modular Ratio 'n'	=	
Wall Weight	psf =	100.0
Short Term Factor	=	
Equiv. Solid Thick.	=	
Masonry Block Type	=	Medium Weight
Masonry Design Method	=	ASD

Concrete Data

f'c	psi =	2,500.0
Fy	psi =	60,000.0

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	IBC 2018, ACI
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.000
Seismic, E	1.000



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Cantilevered Retaining Wall

Code: IBC 2018, ACI 318-14, TMS 402-16

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing
As (based on applied moment) :	0.0346 in ² /ft	
(4/3) * As :	0.0462 in ² /ft	Min Stem T&S Reinf Area 1.008 in ²
200bd/fy : 200(12)(6.1875)/60000 :	0.2475 in ² /ft	Min Stem T&S Reinf Area per ft of stem Height : 0.192 in ² /ft
0.0018bh : 0.0018(12)(8) :	0.1728 in ² /ft	Horizontal Reinforcing Options :
	=====	One layer of : Two layers of :
Required Area :	0.1728 in ² /ft	#4@ 12.50 in #4@ 25.00 in
Provided Area :	0.2325 in ² /ft	#5@ 19.38 in #5@ 38.75 in
Maximum Area :	0.8382 in ² /ft	#6@ 27.50 in #6@ 55.00 in

Footing Dimensions & Strengths

Toe Width	=	1.00 ft
Heel Width	=	4.00
Total Footing Width	=	5.00
Footing Thickness	=	24.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f _c =	2,500 psi	F _y = 60,000 psi
Footing Concrete Density	=	150.00 pcf
Min. As %	=	0.0018
Cover @ Top	2.00	@ Btm. = 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 1,822	692 psf
Mu' : Upward	= 873	5,238 ft-#
Mu' : Downward	= 225	5,483 ft-#
Mu: Design	= 649	245 ft-#
Actual 1-Way Shear	= 1.28	1.03 psi
Allow 1-Way Shear	= 40.00	40.00 psi
Toe Reinforcing	= # 5 @ 16.00 in	
Heel Reinforcing	= # 5 @ 18.00 in	
Key Reinforcing	= None Spec'd	

Other Acceptable Sizes & Spacings

Toe: Not req'd: Mu < phi*5*lambda*sqrt(f'c)*Sm
Heel: Not req'd: Mu < phi*5*lambda*sqrt(f'c)*Sm
Key: No key defined

Min footing T&S reinf Area	2.59	in ²
Min footing T&S reinf Area per foot	0.52	in ² /ft
If one layer of horizontal bars:		If two layers of horizontal bars:
#4@ 4.63 in		#4@ 9.26 in
#5@ 7.18 in		#5@ 14.35 in
#6@ 10.19 in		#6@ 20.37 in

Summary of Overturning & Resisting Forces & Moments

ItemOVERTURNING.....		RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
Heel Active Pressure	= 729.0	2.25	1,640.3	Soil Over Heel	= 1,741.7	3.33	5,805.6
Surcharge over Heel	=			Sloped Soil Over Heel	=		
Surcharge Over Toe	=			Surcharge Over Heel	=		
Adjacent Footing Load	=			Adjacent Footing Load	=		
Added Lateral Load	=			Axial Dead Load on Stem	= 316.0	1.33	421.3
Load @ Stem Above Soil	=			* Axial Live Load on Stem	= 360.0	1.33	480.0
	=			Soil Over Toe	= 45.9	0.50	23.0
				Surcharge Over Toe	=		
Total	729.0	O.T.M.	1,640.3	Stem Weight(s)	= 525.0	1.33	700.0
				Earth @ Stem Transitions	=		
				Footing Weighl	= 1,500.0	2.50	3,750.0
Resisting/Overturning Ratio		=	6.52	Key Weight	=		
Vertical Loads used for Soil Pressure =		4,488.6	lbs	Vert. Component	=		
				Total =	4,128.6	lbs	R.M.= 10,699.8

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.



Evans New Residence
6173 Valley View Drive
Oakland, CA

Title :
Job # : A-1800502 Dsgnr: Project Designer... Date: 12 AUG 2018
Description....

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RetainPro (c) 1987-2018, Build 11.18.07.31

License : KW-06062332

License To : advanced engineering service

Cantilevered Retaining Wall

Code: IBC 2018,ACI 318-14,TMS 402-16

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci

Horizontal Defl @ Top of Wall (approximate only) 0.038 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.



Evans New Residence
6173 Valley View Drive
Oakland, CA

Title :
Job # : A-1800502 Dsgnr: Project Designer... Date: 12 AUG 2018
Description....

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RetainPro (c) 1987-2018, Build 11.18.07.31

License : KW-06062332

License To : advanced engineering service

Cantilevered Retaining Wall

Code: IBC 2018,ACI 318-14,TMS 402-16

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom

Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #5 bar specified in this stem design segment = 23.40 in

Development length for #5 bar specified in this stem design segment = 18.00 in

Hooked embedment length into footing for #5 bar specified in this stem design segment = 10.50 in

As Provided = 0.2325 in/ft

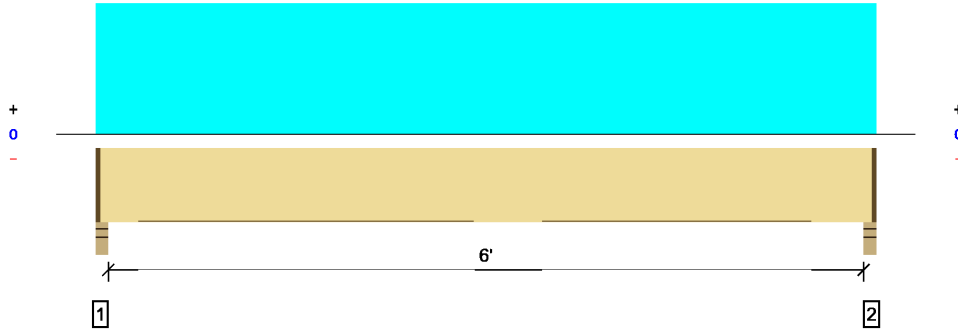
As Required = 0.1728 in/ft

01: Level 2			
Member Name	Results	Current Solution	Comments
balcony joist	Passed	1 Piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC	
Balcony Drop Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
garage: Joist	Passed	1 Piece(s) 16" TJI® 360 @ 16" OC	
2nd floor Joists	Passed	1 Piece(s) 11 7/8" TJI® 230 @ 24" OC	
2nd Floor: Drop Beam	Passed	1 Piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL	
closet Beam	Passed	1 Piece(s) 4 x 12 Douglas Fir-Larch No. 1	
02: Level 1			
Member Name	Results	Current Solution	Comments
1st floor joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
03: Roof			
Member Name	Results	Current Solution	Comments
Roof: Joist	Passed	1 Piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC	
Roof: ridge Beam	Passed	1 Piece(s) 3 1/2" x 14" 2.0E Parallam® PSL	

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1 piece(s) 2 x 10 Douglas Fir-Larch No. 1 @ 24" OC

Overall Length: 6' 7"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	606 @ 2' 1/2"	1434 (2.25")	Passed (42%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	424 @ 1' 3/4"	1665	Passed (25%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	903 @ 3' 3 1/2"	2255	Passed (40%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.023 @ 3' 3 1/2"	0.154	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.037 @ 3' 3 1/2"	0.308	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

 System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 6' 5" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	2.25"	1.50"	230	395	625	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 6' 7"	24"	35.0	60.0	Residential - Living Areas

Member Notes

Balcony joist

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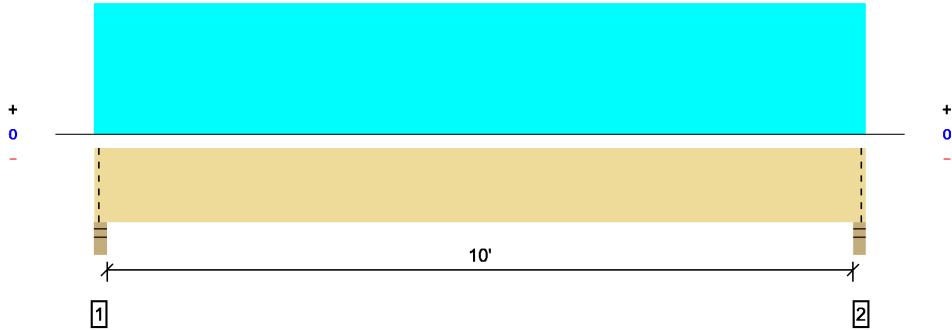
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Overall Length: 10' 7"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1310 @ 2"	5206 (3.50")	Passed (25%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1005 @ 1' 2 3/4"	4725	Passed (21%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	3250 @ 5' 3 1/2"	6768	Passed (48%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.053 @ 5' 3 1/2"	0.342	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.087 @ 5' 3 1/2"	0.512	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 7" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking
2 - Stud wall - SPF	3.50"	3.50"	1.50"	516	794	1310	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 10' 7"	N/A	10.0		
1 - Uniform (PSF)	0 to 10' 7" (Front)	2' 6"	35.0	60.0	Residential - Living Areas

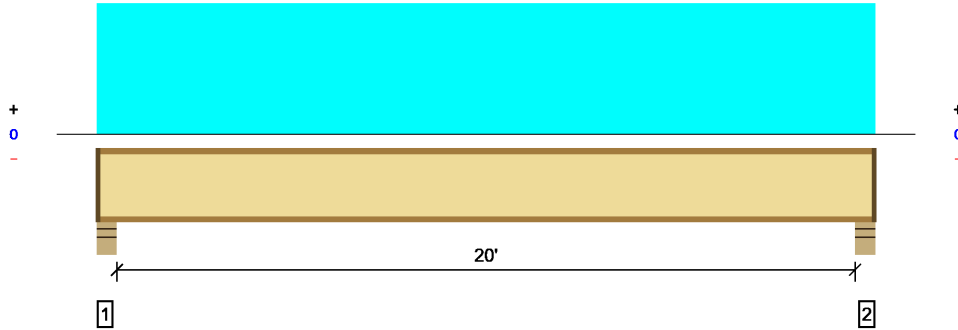
Member Notes
 Balcony drop beam

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Overall Length: 20' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1312 @ 4 1/2"	1505 (3.50")	Passed (87%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1267 @ 5 1/2"	2190	Passed (58%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	6439 @ 10' 5 1/2"	8405	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.361 @ 10' 5 1/2"	0.504	Passed (L/670)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.572 @ 10' 5 1/2"	1.008	Passed (L/423)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	48	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' 3" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 20' 9" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: None

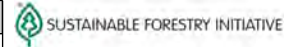
Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board
2 - Stud wall - SPF	5.50"	4.25"	2.70"	488	837	1325	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 20' 11"	16"	35.0	60.0	Residential - Living Areas

Member Notes
Garage joist

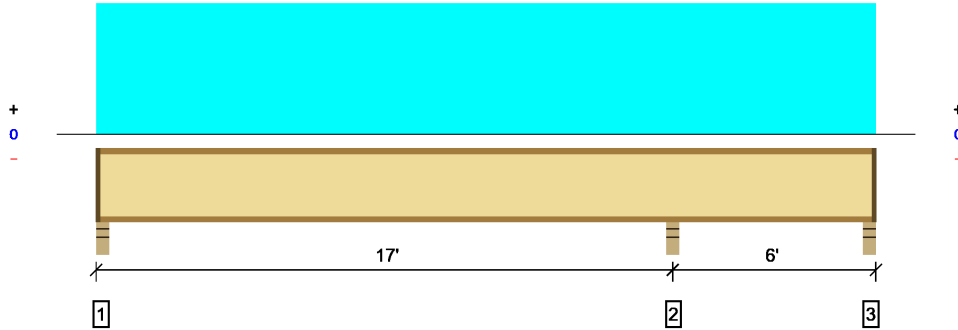
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Overall Length: 23'



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1833 @ 17"	2410 (3.50")	Passed (76%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	962 @ 16' 10 1/4"	1821	Passed (53%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-2837 @ 17"	4215	Passed (67%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.231 @ 7' 9 5/8"	0.420	Passed (L/871)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.299 @ 7' 9 1/2"	0.840	Passed (L/674)	--	1.0 D + 1.0 L (Alt Spans)
TJ-Pro™ Rating	42	40	Passed	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 6" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' o/c unless detailed otherwise.
- -392 lbs uplift at support 22' 8 1/4". Strapping or other restraint may be required.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 5/8" Gypsum ceiling, bridging or blocking at max. 8' o.c..

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.50"	2.25"	1.75"	168	563	731	1 1/4" Rim Board
2 - Stud wall - SPF	3.50"	3.50"	3.50"	423	1410	1833	None
3 - Stud wall - SPF	3.50"	2.25"	1.75"	-39	233/-354	233/-393	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 23'	24"	12.0	40.0	Residential - Living Areas

Member Notes

2nd Floor Joist

Weyerhaeuser Notes

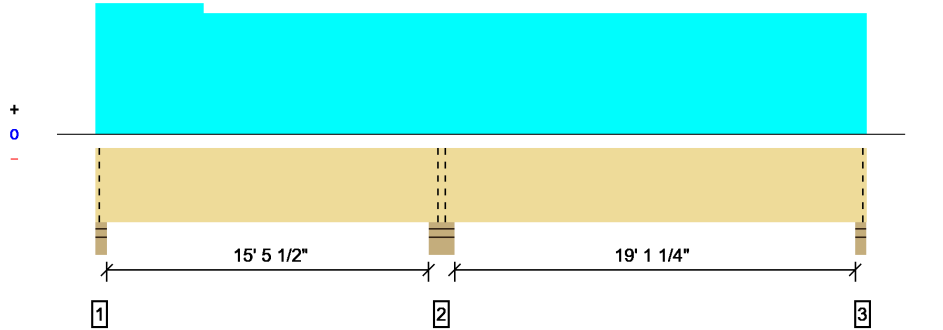
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1 piece(s) 5 1/4" x 11 1/4" 2.0E Parallam® PSL
Overall Length: 35' 7 3/4"


All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	11469 @ 16'	15619 (7.00")	Passed (73%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	5441 @ 17' 2 3/4"	14273	Passed (38%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	-20781 @ 16'	33694	Passed (62%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.375 @ 26' 7 7/16"	0.651	Passed (L/625)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.771 @ 26' 9 3/8"	0.976	Passed (L/304)	--	1.0 D + 1.0 Lr (Alt Spans)

 System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 35' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 35' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Roof Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	1655	369/-66	1459	3483/-66	Blocking
2 - Stud wall - SPF	7.00"	7.00"	5.14"	6338	913	5132	12383	Blocking
3 - Stud wall - SPF	3.00"	3.00"	1.83"	2209	342/-32	1881	4432/-32	Blocking

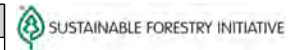
- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	0 to 35' 7 3/4"	N/A	18.5			
1 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	1'	12.0	40.0	-	Residential - Living Areas
2 - Uniform (PSF)	0 to 5' (Front)	1'	23.0	20.0	-	Additional LL & DL for balcony LL=60 DL=35
3 - Uniform (PSF)	0 to 35' 7 3/4" (Front)	11' 6"	15.0	-	20.0	
4 - Uniform (PLF)	0 to 35' 7 3/4" (Front)	N/A	80.0	-	-	Wall weight

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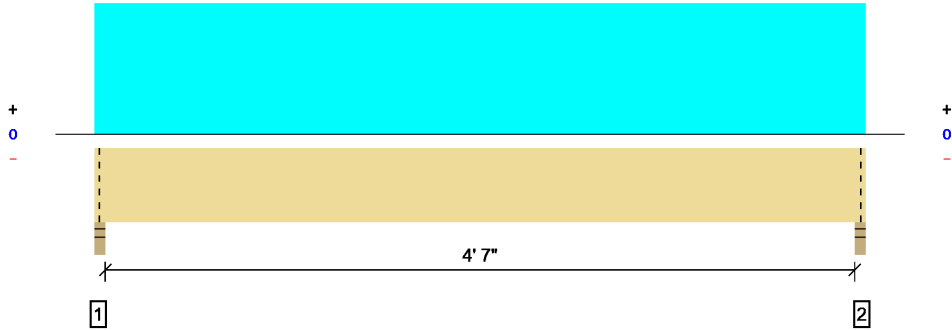
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Overall Length: 5' 1"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	686 @ 1' 1/2"	4463 (3.00")	Passed (15%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	366 @ 1' 2 1/4"	4725	Passed (8%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	788 @ 2' 6 1/2"	6768	Passed (12%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.003 @ 2' 6 1/2"	0.161	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.005 @ 2' 6 1/2"	0.242	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
 Member Type : Drop Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

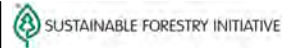
- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' 1" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking
2 - Stud wall - SPF	3.00"	3.00"	1.50"	178	508	686	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 1"	N/A	10.0		
1 - Uniform (PSF)	0 to 5' 1" (Front)	5'	12.0	40.0	Residential - Living Areas

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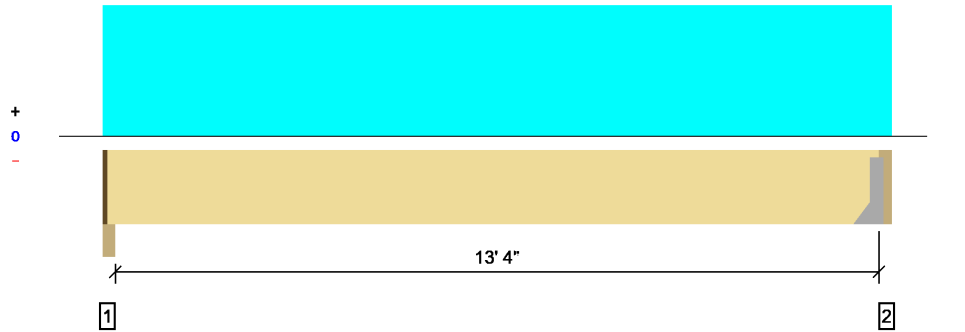


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The product application, input design loads, dimensions and support information have been provided by M. Abdelfatah, P.E.

Forte Software Operator	Job Notes
mohsen abdelatah Advanced Engineering Service (209) 483-2539 advancedengineering@comcast.net	Evan's Family New Residence 6173 Valley View Dr Oakland, CA

Overall Length: 13' 11"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	698 @ 13' 7 1/2"	1406 (1.50")	Passed (50%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	600 @ 12' 8 1/4"	2025	Passed (30%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2340 @ 6' 11"	3032	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.193 @ 6' 11"	0.335	Passed (L/835)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.251 @ 6' 11"	0.671	Passed (L/642)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

System : Floor
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 13' 6" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Ledger on masonry - DF	3.50"	2.25"	1.50"	166	553	719	1 1/4" Rim Board
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	168	560	728	See note ¹

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	LUS28	1.75"	N/A	6-10d	3-10d	None

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 13' 11"	24"	12.0	40.0	Residential - Living Areas

Member Notes

1st floor joist

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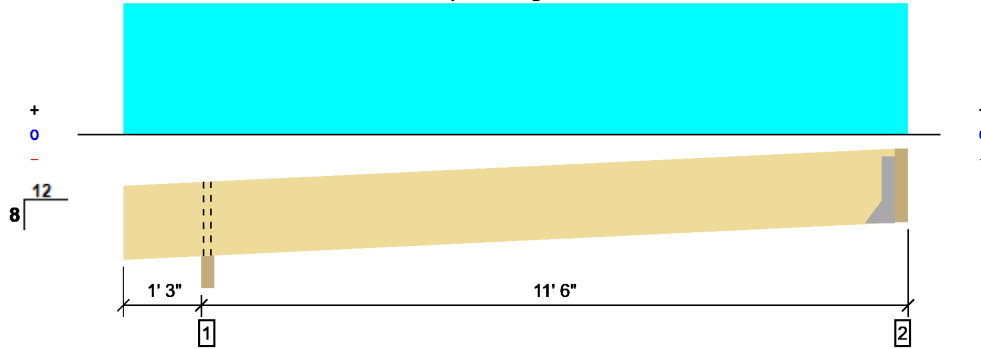
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1 piece(s) 2 x 12 Douglas Fir-Larch No. 1 @ 24" OC

Overall Sloped Length: 15' 11 3/8"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	416 @ 12' 5 1/2"	1406 (1.50")	Passed (30%)	--	1.0 D + 1.0 Lr (Alt Spans)
Shear (lbs)	357 @ 2' 3 7/8"	2531	Passed (14%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	1136 @ 6' 11 7/8"	3790	Passed (30%)	1.25	1.0 D + 1.0 Lr (Alt Spans)
Live Load Defl. (in)	0.063 @ 6' 11 5/16"	0.443	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.119 @ 6' 11 3/8"	0.665	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)

 System : Roof
 Member Type : Joist
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 8/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Overhang deflection criteria: LL (2L/360) and TL (2L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 15' o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 15' o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Beveled Plate - SPF	3.50"	3.50"	1.50"	253	281	534	Blocking
2 - Hanger on 11 1/4" DF beam	3.50"	Hanger ¹	1.50"	205	231	436	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors						
Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	

Loads	Location (Side)	Spacing	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
1 - Uniform (PSF)	0 to 12' 9"	24"	15.0	20.0	Roof

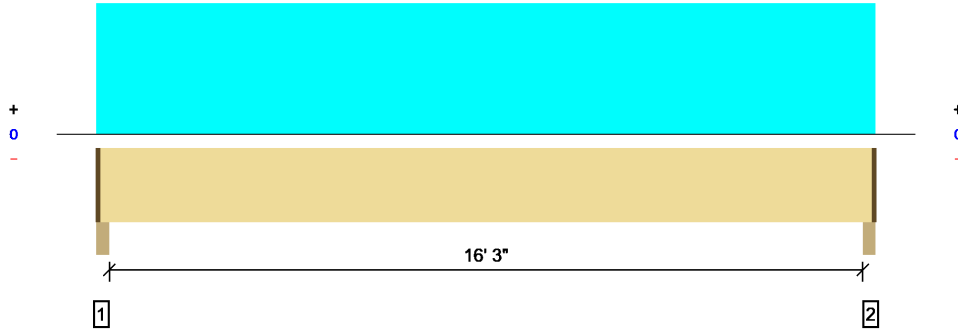
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Overall Length: 16' 10"



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal. Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3473 @ 2"	4922 (2.25")	Passed (71%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	2907 @ 1' 5 1/2"	11842	Passed (25%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	14218 @ 8' 5"	33952	Passed (42%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.258 @ 8' 5"	0.550	Passed (L/767)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.469 @ 8' 5"	0.825	Passed (L/422)	--	1.0 D + 1.0 Lr (All Spans)

System : Roof
 Member Type : Flush Beam
 Building Use : Residential
 Building Code : IBC 2015
 Design Methodology : ASD
 Member Pitch: 0/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 16' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 16' 8" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board
2 - Column - DF	3.50"	2.25"	1.59"	1579	1936	3515	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	1 1/4" to 16' 8 3/4"	N/A	15.3		
1 - Uniform (PSF)	0 to 16' 10" (Front)	11' 6"	15.0	20.0	Roof

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